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STN STRUCTURE AND KEYWORD SEARCH (REGISTRY, CAPLUS)

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PASSWORD:
TERMINAL (ENTER 1, 2, 3, OR ?):2

* * * * * * * * * * Welcome to STN International * * * * * * * * * *

NEWS 1		Web Page for STN Seminar Schedule - N. America
NEWS 2	JAN 02	STN pricing information for 2008 now available
NEWS 3	JAN 16	CAS patent coverage enhanced to include exemplified prophetic substances
NEWS 4	JAN 28	USPATFULL, USPAT2, and USPATOLD enhanced with new custom IPC display formats
NEWS 5	JAN 28	MARPAT searching enhanced
NEWS 6	JAN 28	USGENE now provides USPTO sequence data within 3 days of publication
NEWS 7	JAN 28	TOXCENTER enhanced with reloaded MEDLINE segment
NEWS 8	JAN 28	MEDLINE and LMEDLINE reloaded with enhancements
NEWS 9	FEB 08	STN Express, Version 8.3, now available
NEWS 10	FEB 20	PCI now available as a replacement to DPCI
NEWS 11	FEB 25	IFIREF reloaded with enhancements
NEWS 12	FEB 25	IMSPRODUCT reloaded with enhancements
NEWS 13	FEB 29	WPINDEX/WPIDS/WPIX enhanced with ECLA and current U.S. National Patent Classification
NEWS 14	MAR 31	IFICDB, IFIPAT, and IFIUDB enhanced with new custom IPC display formats
NEWS 15	MAR 31	CAS REGISTRY enhanced with additional experimental spectra
NEWS 16	MAR 31	CA/CAplus and CASREACT patent number format for U.S. applications updated
NEWS 17	MAR 31	LPCI now available as a replacement to LDPCI
NEWS 18	MAR 31	EMBASE, EMBAL, and LEMBASE reloaded with enhancements
NEWS 19	APR 04	STN AnaVist, Version 1, to be discontinued
NEWS 20	APR 15	WPIDS, WPINDEX, and WPIX enhanced with new predefined hit display formats
NEWS 21	APR 28	EMBASE Controlled Term thesaurus enhanced
NEWS 22	APR 28	IMSRESEARCH reloaded with enhancements
NEWS 23	MAY 30	INPAFAMDB now available on STN for patent family searching
NEWS 24	MAY 30	DGENE, PCTGEN, and USGENE enhanced with new homology sequence search option
NEWS 25	JUN 06	EPFULL enhanced with 260,000 English abstracts
NEWS 26	JUN 06	KOREAPAT updated with 41,000 documents

NEWS EXPRESS FEBRUARY 08 CURRENT WINDOWS VERSION IS V8.3,
AND CURRENT DISCOVER FILE IS DATED 20 FEBRUARY 2008

NEWS HOURS STN Operating Hours Plus Help Desk Availability

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 NEWS IPC8      For general information regarding STN implementation of IPC 8

Enter NEWS followed by the item number or name to see news on that
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* * * * * * * * * * * * * * * STN  Columbus  * * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 14:22:43 ON 08 JUN 2008

=> FIL REG
COST IN U.S. DOLLARS                                 SINCE FILE      TOTAL
                                                        ENTRY    SESSION
FULL ESTIMATED COST                                      0.21       0.21

FILE 'REGISTRY' ENTERED AT 14:22:49 ON 08 JUN 2008
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STRUCTURE FILE UPDATES:    6 JUN 2008  HIGHEST RN 1026208-38-7
DICTIONARY FILE UPDATES:   6 JUN 2008  HIGHEST RN 1026208-38-7

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http://www.cas.org/support/stngen/stndoc/properties.html

=>
Uploading C:\Program Files\Stnexp\Queries\10576282\1.str
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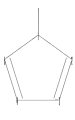

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chain nodes :
6
ring nodes :
1  2  3  4  5
chain bonds :
1-6
ring bonds :
1-2  1-5  2-3  3-4  4-5
exact/norm bonds :
1-2  1-5  1-6  2-3  3-4  4-5


Match level :
1:Atom  2:Atom  3:Atom  4:Atom  5:Atom  6:CLASS



L1      STRUCTURE UPLOADED

=> D
L1 HAS NO ANSWERS
L1                STR
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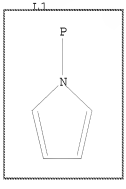


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Structure attributes must be viewed using STN Express query preparation.


=> S L1
SAMPLE SEARCH INITIATED 14:23:02 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -      644 TO ITERATE

100.0% PROCESSED      644 ITERATIONS                                45 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:        11358 TO    14402
PROJECTED ANSWERS:             498 TO     1302

L2           45 SEA SSS SAM L1

=> D SCAN
```

L2 45 ANSWERS REGISTRY COPYRIGHT 2008 ACS on STN
IN Phosphorous diamides, N,N,N',N'-tetrakis(1-methylethyl)-P-[2-[(phenylimino)methyl]-1H-pyrrol-1-yl]-
MF C23 H37 N4 P

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1)>1

L2 45 ANSWERS REGISTRY COPYRIGHT 2008 ACS on STN (Continued)

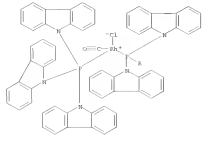
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1)>0

L2 45 ANSWERS REGISTRY COPYRIGHT 2008 ACS on STN
IN Rhodium, carbonylchlorobis[9,9',9''-(phosphinidyne-kP)tris[9H-carbazole]]-, (SP-4-3)-, compd. with dichloromethane (1:2) (PCI)
MF C73 H48 Cl N6 O P2 Rh . 2 C H2 Cl2

CM 1

PAGE 1-A



PAGE 2-A

CM 2

Cl-CH2-Cl

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=> S L1 FULL
FULL SEARCH INITIATED 14:23:20 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -    12302 TO ITERATE

100.0% PROCESSED    12302 ITERATIONS                          783 ANSWERS
SEARCH TIME: 00.00.01

L3          783 SEA SSS FUL L1
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=> FIL CAPLUS
COST IN U.S. DOLLARS                          SINCE FILE      TOTAL
                                                 ENTRY    SESSION
FULL ESTIMATED COST                             178.36     178.57

FILE 'CAPLUS' ENTERED AT 14:23:42 ON 08 JUN 2008
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FILE COVERS 1907 - 8 Jun 2008  VOL 148 ISS 24
FILE LAST UPDATED: 6 Jun 2008  (20080606/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply.
They are available for your review at:

http://www.cas.org/legal/infopolicy.html
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=> S L3
L4          267 L3

=> S L4 AND HYDROFORMYLATION
           7611 HYDROFORMYLATION
L5           34 L4 AND HYDROFORMYLATION

=> S L4 AND PHOSPHORAMIDITE
           3224 PHOSPHORAMIDITE
L6            4 L4 AND PHOSPHORAMIDITE
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=> S L5 OR L4
L7          267 L5 OR L4
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=> S L5 OR L6
L8           37 L5 OR L6
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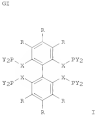
=> D IBIB ABS HITSTR L8 TOT

L8 ANSWER 1 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:761346 CAPLUS
DOCUMENT NUMBER: 147:143552
TITLE: Chelating tetraphosphorus ligands with 1,1'-biphenyl backbone for transition metal-catalyzed hydroformylation of alkenes and related reactions
INVENTOR(S): Zhang, Xumu; Yan, Yongjun
PATENT ASSIGNEE(S): The Penn State Research Foundation, USA
SOURCE: PCT Int. Appl., 37pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2007078859	A2	20070712	WO 2006-US47964	20061215
WO 2007078859	A3	20071129		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW			
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AP, EA, EP, OA			
US 20070225525	A1	20070926	US 2006-439438	20060215
PRIORITY APPLN. INFO.:			US 2005-750733P P	20051215

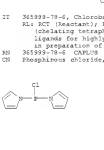
OTHER SOURCE(S): MARPAT 147:143552
GI



I

L8 ANSWER 1 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)
AB Tetraphosphines, tetraphosphonites, tetraphosphinites, tetraphosphorodiamidites and combinations thereof I [R = H, alkyl, aryl, alkoxy, aryloxy, OCONR2, halo, sulfonyl, phosphinyl, amino; Y = alkyl, aryl, alkoxy, aryloxy, (un)substituted 1-pyrrolyl; X = O, NH, alkylimino, CH2], useful as ligands for transition metal-catalyzed hydroformylation of alkenes, are claimed. Ligands I demonstrate enhanced complexation ability at high pressures of CO, thus providing high regioselectivity and n/iso ratio of the product aldehydes in the processes, catalyzed by transition metal complex, preferably rhodium(I) complexes, at lower ligand/metal ratios, compared to monodentate and bidentate ligands. The ligands I may be also useful in hydrocarboxylation, hydrocyanation, isomerization-formylation, hydroisomerization and similar related reactions. In an example, ligand I (L1, X = O, R = H, Y = 1-pyrrolyl) was prepared by reaction of 4,4 mmol of chlorodi-1-pyrrolylphosphine with 1 mmol of 1,1'-biphenyl-2,2',6,6'-tetrol in the presence of 1 mL of Et3N in 10 mL of THF for 6 h at 20°. In subsequent examples, effects of hydroformylation reaction conditions and substrate structure were explored; hydroformylation of 10 mmol of 1-octene catalyzed by 3:1 mol. ratio of L1:[Rh(acac)(CO)2] (1:1104 catalyst/substrate ratio) at 100° and 10 atm of CO/H2 (1:1) for 12 h yielded 1-nonanal with 37:1 n/iso regioselectivity.
IT 920508-98-1P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(chelating tetraphosphorus ligands with 1,1'-biphenyl backbone as ligands for highly regioselective hydroformylation of alkenes in preparation of linear aldehydes)
RN 920508-98-1 CAPLUS
CN 1H-Pyrrole, 1,1',1'',1''',1'''',1''''',1''''''-[[1,1'-biphenyl]-2,2',6,6'-tetrayltetrakis(oxyphosphinidyne)]octakis- (CA INDEX NAME)

L8 ANSWER 1 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

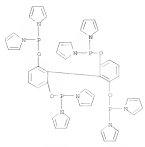


IT 365999-78-4, Chlorobis(1-pyrrolyl)phosphine
RL: RCT (Reactant); RACT (Reactant or reagent)
(chelating tetraphosphorus ligands with 1,1'-biphenyl backbone as ligands for highly regioselective hydroformylation of alkenes in preparation of linear aldehydes)
RN 365999-78-4 CAPLUS
CN Phosphorous chloride, P,P-di-1H-pyrrol-1-yl- (CA INDEX NAME)

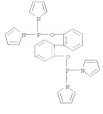
L8 ANSWER 2 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:1166927 CAPLUS
DOCUMENT NUMBER: 146:162832
TITLE: A Tetraphosphorus Ligand for Highly Regioselective Isomerization-Hydroformylation of Internal Olefins
AUTHOR(S): Yan, Yongjun; Zhang, Xumu; Zhang, Xumu
CORPORATE SOURCE: Department of Chemistry, The Pennsylvania State University, University Park, PA, 16802, USA
SOURCE: Journal of the American Chemical Society (2006), 128(50), 16058-16061
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 146:162832
AB A new pyrrole-based tetraphosphorus ligand capable of forming multiple chelating modes has been prepared. Higher regioselectivity has been achieved in the rhodium-catalyzed isomerization-hydroformylations of internal olefins compared with its bisphosphorus analog.
IT 365999-78-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of pyrrole-based tetraphosphorus ligand)
RN 365999-78-4 CAPLUS
CN Phosphorous chloride, P,P-di-1H-pyrrol-1-yl- (CA INDEX NAME)

IT 920508-98-1P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(regioselective rhodium-catalyzed isomerization-hydroformylations of internal olefins in presence of pyrrole-based tetraphosphorus ligand)
RN 920508-98-1 CAPLUS
CN 1H-Pyrrole, 1,1',1'',1''',1'''',1''''',1''''''-[[1,1'-biphenyl]-2,2',6,6'-tetrayltetrakis(oxyphosphinidyne)]octakis- (CA INDEX NAME)

L8 ANSWER 2 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)



IT 247130-61-6
RL: CAT (Catalyst use); USES (Uses)
(rhodium-catalyzed isomerization-hydroformylations of internal and terminal olefins in presence of pyrrole-based phosphorus ligands)
RN 247130-61-6 CAPLUS
CN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-[1,1'-biphenyl]-2,2'-diyl ester (CA INDEX NAME)



REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

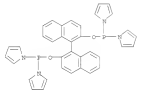
L8 ANSWER 3 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:1185981 CAPLUS
DOCUMENT NUMBER: 146:28997
TITLE: Synthesis and application of bidentate phosphoramidite ligand with binaphthol backbone in alkene hydroformylation reaction
INVENTOR(S): Ding, Kuiling; Shao, Zaoyuan
PATENT ASSIGNEE(S): Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 27pp.
CODEN: CHXLXV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

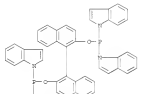
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1857776	A	20061108	CN 2006-10027493	20060609
PRIORITY APPLN. INFO.:			CN 2006-10027493	20060609

OTHER SOURCE(S): MARPAT 146:28997
AB The title ligand can be used for manufacture of aldehyde compds. via alkene hydroformylation reaction including the following steps: (1) performing a reaction between a ligand I and rhodium salt in an organic solvent in the presence of inert gas or H2 to obtain a ligand/Rh catalyst, and (2) adding alkene to the ligand/Rh catalyst solution in the presence of inert gas or N2, pumping CO and H2 for reaction to obtain a hydroformylation product.
IT 247130-62-7P 247130-65-0P 916049-82-6P
916049-83-7P 916049-84-8P 916049-85-9P
916049-86-0P 916049-87-1P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation and application of bidentate phosphoramidite ligand with binaphthol backbone in alkene hydroformylation reaction)
RN 247130-62-7 CAPLUS
CN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-[1,1'-binaphthalene]-2,2'-diyl ester (CA INDEX NAME)

L8 ANSWER 3 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

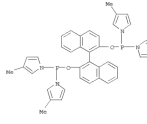


RN 247130-65-0 CAPLUS
CN Phosphinous acid, P-1H-pyrrol-1-yl-, P,P'-[1,1'-binaphthalene]-2,2'-diyl ester (CA INDEX NAME)

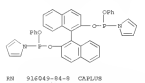


RN 916049-82-6 CAPLUS
CN Phosphinous acid, P,P-bis(3-methyl-1H-pyrrol-1-yl)-, P,P'-[1,1'-binaphthalene]-2,2'-diyl ester (CA INDEX NAME)

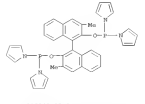
L8 ANSWER 3 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)



RN 916049-83-7 CAPLUS
CN Phosphinous acid, P,P'-[1,1'-binaphthalene]-2,2'-diyl P,P'-diphenyl ester (CA INDEX NAME)

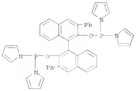


RN 916049-84-8 CAPLUS
CN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-(3,3'-dimethyl[1,1'-binaphthalene]-2,2'-diyl) ester (CA INDEX NAME)

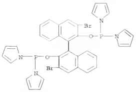


RN 916049-85-9 CAPLUS
CN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-(3,3'-diphenyl[1,1'-binaphthalene]-2,2'-diyl) ester (CA INDEX NAME)

L8 ANSWER 3 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

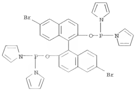


RN 916049-86-0 CAPLUS
CN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-(3,3'-dibromo[1,1'-binaphthalene]-2,2'-diyl) ester (CA INDEX NAME)

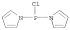


RN 916049-87-1 CAPLUS
CN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-(6,6'-dibromo[1,1'-binaphthalene]-2,2'-diyl) ester (CA INDEX NAME)

L8 ANSWER 3 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)



IT 365999-78-6P 916049-88-2P 916049-89-3P 916049-90-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and application of bidentate phosphoramidite ligand with binaphthol backbone in alkene hydroformylation reaction)
RN 365999-78-6 CAPLUS
CN Phosphinous chloride, P,P-di-1H-pyrrol-1-yl- (CA INDEX NAME)



RN 916049-88-2 CAPLUS
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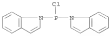
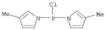
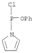


RN 916049-89-3 CAPLUS
CN Phosphinous chloride, P,P-bis(3-methyl-1H-pyrrol-1-yl)- (CA INDEX NAME)



RN 916049-90-6 CAPLUS

L8 ANSWER 3 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)
CN Phosphonochloridous acid, P-1H-pyrrol-1-yl-, phenyl ester (CA INDEX NAME)



L8 ANSWER 4 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2006:653481 CAPLUS
DOCUMENT NUMBER: 145:63043
TITLE: Preparation of phosphorus chelate phosphite-phosphorodiamidites as ligands for transition metal-catalyzed hydroformylation and addition reactions of alkenes
INVENTOR(S): Volland, Martin; Papp, Rainer; Hettche, Frank; Jaekel, Christoph; Weiskopf, Verena; Paciello, Rocco; Springmann, Steffen
PATENT ASSIGNEE(S): BASF A.-G., Germany
SOURCE: Ger. Offen., 111 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

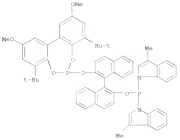
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 102005061642	A1	20060706	DE 2005-102005061642	20051222
PRIORITY APPLN. INFO.:			DE 2004-1020040623131A	20041223

OTHER SOURCE(S): CASREACT 145:63043; MARPAT 145:63043

AB Phosphite-phosphorodiamidite optionally chiral P,P'-chelate ligands R1R2PZYOP(OR3)(OR4) [1; R1, R2 = 5-7-membered N-bound nitrogen heterocyclyl, preferably 1-pyrrolyl, 1-indolyl, optionally R1PR2 forming hetero(poly)cycle, as (un)substituted 2,2'- or 3,3'-bipyrrole-1,1'-diyl, 2,2'-biindole-1,1'-diyl; R3, R4 = (cyclo)alkyl, heterocyclyl, aryl, optionally R3OPOR4 = 5-7-membered heterocycle, preferably R3-R4 = 1,1'-biphenyl-2,2'-diyl, 1,1'-binaphthyl-2,2'-diyl; Z = O, S, silylene, imino, preferably Z = O; Y = bivalent carbon-containing group, optionally chiral, preferably Y = (un)substituted 1,1'-binaphthalen-2,2'-diyl, 4,5-xanthenediyl, 1,1'-biphenyl-2,2'-diyl], useful for transition metal-catalyzed hydroformylation, optionally for asym. hydroformylation, hydrogenation, or other asym. addition reactions (no data), were prepared by reaction of L1ZYOL2 (L1, L2 = H, Li, Na, K; same Z, Y) with X1PR1R2 and X2PR3R4 (same R1-R4; X1, X2 = halo) or by reaction of X32PZYOPX32 (X3 = halo, preferably X3 = Cl), prepared by reaction of L1ZYOL2 with PCl3, with hydroxy-compds. R3OH, R4OH or HOR3R4OH, and heterocycles R1H, R2H or R1R2H2 and tested in alkene hydroformylation reaction. In an example, compound 1a (R1 = R2 = 3-methyl-1H-indol-1-yl; R3-R4 = 3,3'-di-tert-butyl-5,5'-dimethoxy-1,1'-biphenyl-2,2'-diyl; Z = O, Y = 1,1'-binaphthalene-2,2'-diyl) was prepared by reaction of 4-chlorobinaphtho[2,1-d:1',2'-f][1,3,2]dioxaphosphepin with chlorobis(3-methyl-1H-indol-1-yl)phosphine and 3,3'-di-tert-butyl-5,5'-dimethoxy-1,1'-biphenyl-2,2'-diol at room temperature for 32 h. In another example, 1-butene hydroformylation at 17 atm and 90° by 1:1 CO/H2 catalyzed by Rh(CO)2(acac)/1a (Rh:1a = 1:10) yielded 77% of pentanal containing 4.5% of 2-methylbutanal and 22% of butene-2 byproduct.

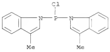
IT 891862-42-3P 891862-43-4P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation of phosphite-phosphorodiamidite chelate ligands for

L8 ANSWER 4 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)
rhodium-catalyzed hydroformylation of alkenes)
RN 891862-42-3 CAPLUS
CN Phosphinous acid, bis(3-methyl-1H-indol-1-yl)-, 2'-[[4,8-bis(1,1-dimethylethyl)-2,10-dimethoxydibenzo[d,f][1,3,2]dioxaphosphepin-6-yl]oxy][1,1'-binaphthalen]-2-yl ester (9CI) (CA INDEX NAME)



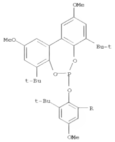
RN 891862-43-4 CAPLUS
CN Phosphinous acid, bis(3-methyl-1H-indol-1-yl)-, 2'-[[4,8-bis(1,1-dimethylethyl)-2,10-dimethoxydibenzo[d,f][1,3,2]dioxaphosphepin-6-yl]oxy]-3,3'-bis(1,1-dimethylethyl)-5,5'-dimethoxy[1,1'-biphenyl]-2-yl ester (9CI) (CA INDEX NAME)

L8 ANSWER 4 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

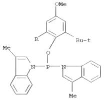


L8 ANSWER 4 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

PAGE 1-A



PAGE 2-A



IT 571171-04-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of phosphite-phosphorodiamidite chelate ligands for rhodium-catalyzed hydroformylation of alkenes)
RN 571171-04-5 CAPLUS
CN Phosphinous chloride, bis(3-methyl-1H-indol-1-yl)- (9CI) (CA INDEX NAME)

L8 ANSWER 5 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:387872 CAPLUS
DOCUMENT NUMBER: 144:432998
TITLE: Preparation of aminophosphine bidentate chiral ligands for asymmetric hydroformylation
INVENTOR(S): Ahlers, Wolfgang; Egen, Martina; Volland, Martin; Jaekel, Christoph; Hettche, Frank; Paciello, Rocco
PATENT ASSIGNEE(S): BASF A.-G., Germany
SOURCE: Ger. Offen., 29 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 102004052040	A1	20060427	DE 2004-102004052040	20041026
WO 2006045597	A1	20060504	WO 2005-EP11449	20051025
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
EP 1807437	A1	20070718	EP 2005-799685	20051025
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR				
CN 101048419	A	20071003	CN 2005-80036881	20051025
JP 2008517966	T	20080529	JP 2007-538325	20051025
KR 2007068418	A	20070629	KR 2007-709386	20070425
PRIORITY APPLN. INFO.:			DE 2004-102004052040A	20041026
			WO 2005-EP11449 W	20051025

OTHER SOURCE(S): CASREACT 144:432998; MARPAT 144:432998
AB Chiral bidentate phosphorus ligands R1R2PXYR3R4 [1; R1, R2 or R1PR2 = 5-7-membered heterocyclyl N- or O-bound to P, preferably R1, R2 = substituted 1-pyrrolyl, 1-indolyl 9-carbazolyl, more preferably R1 or R2 = 3-methyl-1-indolyl; preferably R1PR2 = benzo-, cyclohexeno-, pyrrolo-indolo-annelated 1,3,2-diazaphosphol-2-yl, 1,3,2-diazaphosphepin-2-yl, R1-R2 = 2-(2-oxyaryl)methyl-1-pyrrolyl, 2-(2-oxyaryl)methyl-1-indolyl, 2-(2-oxyaryl)thio-1-pyrrolyl, 2-(2-oxyaryl)oxy-1-pyrrolyl; R3, R4 = (hetero)aryl, preferably R3, R4 = Ph, 2-C6H4, m-xylyl, 3,5-Me2-4-MeOC6H2; X = O, S, silylene, imino; Y = chiral divalent organyl, preferably Y = substituted 1,1'-biphenyl-2,2'-diyl, 1,1'-binaphthyl-2,2'-diyl], useful for asym. metal-catalyzed reactions, preferably for asym. hydroformylation, catalyzed by Group VIII metals, were prepared by condensation of compds. R1R2PCl with functional derivs. HY. In an example, reaction of 3-methylindole with PCl3 gave chlorobis(3-methylindol-

L8 ANSWER 5 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)
1-yl)phosphine, which reacted with (R)-2'-(diphenylphosphino)-1,1'-binaphthalen-2-ol giving 1 [(R)-BINASHAT, R1, R2 = 3-methylindol-1-yl, X = O, Y = 1,1'-binaphthalene-2,2'-diyl, R3 = R4 = Ph]. In another example, asym. hydroformylation of styrene catalyzed by Rh(CO)2(acac)/(R)-BINASHAT gave e-methylbenzeneacetaldehyde with 98% yield and 60% ee.

IT 885029-41-4, (R)-BINASHAT
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation of bidentate binaphthol diphrygroly1 and diindolyl phosphoromidite-phosphines as chiral ligands for asym. catalytic reactions)

RN 885029-41-4 CAPLUS

CN Phosphinous acid, bis(3-methyl-1H-indol-1-yl)-, (1R)-2'-(diphenylphosphino)[1,1'-binaphthalen]-2-yl ester (9CI) (CA INDEX NAME)

IT 57137-04-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of bidentate binaphthol diphrygroly1 and diindolyl phosphoromidite-phosphines as chiral ligands for asym. catalytic reactions)

RN 57137-04-5 CAPLUS

CN Phosphinous chloride, bis(3-methyl-1H-indol-1-yl)- (9CI) (CA INDEX NAME)

L8 ANSWER 6 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:1233908 CAPLUS
DOCUMENT NUMBER: 144:313994
TITLE: Phosphorus-containing catalyst composition and process for hydroformylation reaction using the same
INVENTOR(S): Jeon, Yoo Mook; Ko, Dongkyu; Kam, Sungshik; Kwon, O. Hak; Choi, Jaehwi
PATENT ASSIGNEE(S): S. Korea
SOURCE: U.S. Pat. Appl. Publ., 9 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20060058558	A1	20060316	US 2005-227479	20050915
KR 2006029026	A	20060320	KR 2004-79919	20040915
KR 744477	B1	20070801		
WO 2006031068	A1	20060323	WO 2005-KR3055	20050915

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

CN 1909966	A	20070207	CN 2005-80002703	20050915
EP 1798193	A1	20070530	EP 2005-808509	20050915
R: DE, FR, GB, NL				
JP 2007521947	T	20070809	JP 2006-550967	20050915

PRIORITY APPLN. INFO.: KR 2004-79919 A 20040915
WO 2005-KR3055 W 20050915

OTHER SOURCE(S): MARPAT 144:313994
AB Provided are a catalyst composition including a transition metal catalyst and a nitrogen-containing bidentate phosphorus compound and a process for hydroformylation reaction of olefins to prepare aldehydes which includes stirring the catalyst composition, an olefin compound, and a gas mixture of of carbon monoxide and hydrogen, under high temperature and pressure condition. Therefore, very high catalytic activity and high selectivity in n-aldehyde or iso-aldehyde according to the type of a substituent are ensured.

IT 879296-88-5P
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(phosphorus-containing catalyst composition and process for hydroformylation reaction using the same)

RN 879296-88-5 CAPLUS

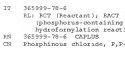
L8 ANSWER 5 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

L8 ANSWER 6 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)
CN Phosphinous amide, N,N'-(1,1'-biphenyl-2,2'-diyl)bis[N-methyl-5,7-di-1H-pyrrol-1-yl- (9CI) (CA INDEX NAME)

IT 365999-78-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(phosphorus-containing catalyst composition and process for hydroformylation reaction using the same)

RN 365999-78-6 CAPLUS

CN Phosphinous chloride, P,P-di-1H-pyrrol-1-yl- (CA INDEX NAME)

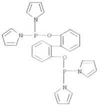


L8 ANSWER 7 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:1329709 CAPLUS
DOCUMENT NUMBER: 144:71485
TITLE: Phosphorus-containing catalyst compositions and hydroformylation process therewith
INVENTOR(S): Jeon, You-Moon; Ko, Dong-Hyun; Kwon, O-Hak; Eom, Sung-Shik; Lee, Sang-Gi; Moon, Ji-Joong; Park, Kwang-Ho
PATENT ASSIGNEE(S): LG Chem. Ltd., S. Korea
SOURCE: PCT Int. Appl., 19 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 2005120705	A1	20051222	WO 2004-KR1646		20040703
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW					
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG					
KR 2005118023	A	20051215	KR 2004-43334		20040612
CN 1863595	A	20061115	CN 2004-80029312		20040703
EP 1755782	A1	20070228	EP 2004-774072		20040703
R: DE, FR, GB, SE					
JP 2007507340	T	20070329	JP 2006-532068		20040703
US 20070123735	A1	20070531	US 2006-575147		20060407
PRIORITY APPLN. INFO.:			KR 2004-43334	A	20040612
			WO 2004-KR1646	W	20040703

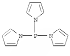
OTHER SOURCE(S): MARPAT 144:71485
AB Provided are a catalyst composition comprising a bidentate ligand, a monodentate ligand, and a transition metal catalyst and a process of hydroformylation of olefin compds., comprising reacting the olefin compound with a gas mixture of hydrogen and carbon monoxide while being stirred at elevated pressures and temps. in the presence of the catalyst composition to produce an aldehyde. The present catalytic composition demonstrates the high catalytic activity and option control of selectivity to normal aldehyde or iso aldehyde (N/I selectivity) to a desired value.
IT 247130-61-6
RL: CAT (Catalyst use); USES (Uses)
(phosphorus-containing catalyst compns. and hydroformylation process therewith)
RN 247130-61-6 CAPLUS

L8 ANSWER 7 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)
CN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-[1,1'-biphenyl]-2,2'-diyl ester (CA INDEX NAME)



REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 8 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:511183 CAPLUS
DOCUMENT NUMBER: 143:195529
TITLE: Rhodium(I) complexes with 1'-(diphenylphosphino)ferrocenecarboxylic acid as active and recyclable catalysts for 1-hexene hydroformylation
AUTHOR(S): Trzeciak, Anna M.; Stepnicka, Petr; Mieczynska, Ewa; Ziolkowski, Jozef J.
CORPORATE SOURCE: Faculty of Chemistry, University of Wroclaw, Wroclaw, 50 383, Pol.
SOURCE: Journal of Organometallic Chemistry (2005), 690(13), 3260-3267
CODEN: JORCAI; ISSN: 0022-328X
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 143:195529
AB The Rh complex trans-[Rh(CO)(Hdpf-κP)(dpf-κ2 O,P)] (I), (Hdpf = 1'-(diphenylphosphino)ferrocenecarboxylic acid) is an efficient and recyclable catalyst for 1-hexene hydroformylation, producing ca. 80% of aldehydes at 10 atm CO/H2 and 80°. After the reaction, I was separated from the reaction mixture and used again three times with the same catalytic activity. The effect of modifying ligands, phosphines and phosphites, on the reactivity of I was studied. The active catalytic systems containing I or trans-[Rh(CO)(L)(dpf-κ2 O,P)] (II) were formed in situ from acetylacetonato rhodium(I) precursors [Rh(CO)2(acac)] or [RhL(CO)(acac)] and Hdpf or Medpf (L = phosphine, Medpf = Me ester of Hdpf).
IT 60259-30-5, Tris(1-pyrrolyl)phosphine
RL: CAT (Catalyst use); USES (Uses)
(co-catalyst ligand; selectivity of Rh-diphenylphosphino-ferrocenecarboxylic acid recyclable catalysts for 1-hexene hydroformylation and role of co-catalyst ligand)
RN 60259-30-5 CAPLUS
CN 1H-Pyrrole, 1,1',1''-phosphinidynetris- (CA INDEX NAME)



REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 9 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:409455 CAPLUS
DOCUMENT NUMBER: 142:465434
TITLE: Method for the continuous production of aldehydes
INVENTOR(S): Volland, Martin; Mackewitz, Thomas; Ahlers, Wolfgang; Schaefer, Ansgar; Richter, Wolfgang; Paciello, Rocco
PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Germany
SOURCE: PCT Int. Appl., 86 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 2005042458	A2	20050512	WO 2004-EP11530		20041014
WO 2005042458	A3	20050609			
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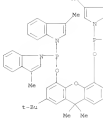
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG					
EP 1678113	A2	20060712	EP 2004-765959		20041014
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK					
CN 1871199	A	20061129	CN 2004-80031210		20041014
JP 2007509093	T	20070412	JP 2006-536003		20041014
US 20070004939	A1	20070104	US 2006-575843		20060413
PRIORITY APPLN. INFO.:			DE 2003-10348482	A	20031021
			DE 2004-102004041144	A	20040824
			WO 2004-EP11530	W	20041014

OTHER SOURCE(S): CASREACT 142:465434; MARPAT 142:465434
AB The invention relates to a method for the continuous production of aldehydes comprising between 5 and 21 carbon atoms, by the isomerizing hydroformylation in a homogeneous phase of olefin compns. comprising between 4 and 20 carbon atoms and containing α-olefins and olefins with internal double bonds, by means of a synthesis gas, in the presence of a homogeneous catalyst that is based on Rh complexed with an organophosphorus ligand containing oxygen atoms and/or nitrogen atoms. Said production is carried out at high temperature and high pressure in a multi-stage reaction system consisting of at least two reaction zones. According to said method, the olefin composition is first reacted in a first reaction zone or a group of several first reaction zones at a total pressure of between 10 and 40 bar, using a synthesis gas with a CO/H2 molar ratio of between 4:1 and 1:2 until a 40 to 95 % conversion of the α-olefins is

L8 ANSWER 9 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)
obtained. The hydroformylation product from the first reaction
zone or group of several first reaction zones is then reacted in a
subsequent reaction zone or group of several reaction zones at a total
pressure of between 5 and 30 bar, using a synthesis gas with a CO/H2
molar
ratio of between 1:4 and 1:1000. The total pressure in the subsequent
reaction zone or zones is resp. 1 to (02-GE) bar lower than that of the
preceding reaction zone, whereby GI represents the total pressure in the
resp. preceding reaction zone and GT represents the total pressure in the
resp. reaction zone that succeeds said first reaction zone or zones, with
the proviso that the difference between GI and GT is greater than 1 bar
and the partial CO pressure in the subsequent reaction zone or zones is
resp. lower than that of the preceding reaction zone. This process
provides aldehydes at higher n-selectivity and space-time yields.
IT 472986-82-8P
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);
USES (Uses)
(continuous production of aldehydes by reaction of olefins with
synthesis
gas in presence of isomerization-hydroformylation catalysts
based on rhodium complexed with organophosphorus ligands)
RN 472986-82-8 CAPLUS
CN Phosphorous acid, bis[3-methyl-1H-indol-1-yl]-,
2,4-bis(1,1-dimethylethyl)-
9,9-dimethyl-9H-xanthene-4,5-diyl ester (9CI) (CA INDEX NAME)

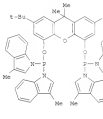


L8 ANSWER 10 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:395135 CAPLUS
DOCUMENT NUMBER: 142:448575
TITLE: Stabilization of hydroformylation catalysts
modified with phosphoramidite ligands
INVENTOR(S): Pagga, Rainer; Ahlers, Wolfgang; Mackewitz, Thomas;
Paciello, Rocco; Volland, Martin
PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Germany
SOURCE: PCT Int. Appl., 45 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005039762	A1	20050506	WO 2004-EP11904	20041022
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
DE 10349343	A1	20050602	DE 2003-10349343	20031023
EP 1677931	A1	20060712	EP 2004-790777	20041022
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
CN 1871066	A	20061129	CN 2004-80031333	20041022
US 20060224000	A1	20061005	US 2006-576282	20060419
PRIORITY APPLN. INFO.:			DE 2003-10349343	A 20031023
			WO 2004-EP11904	W 20041022

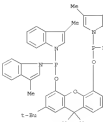
OTHER SOURCE(S): MARPAT 142:448575
GI

L8 ANSWER 10 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)



AB Olefins are hydroformylated in a 2-step procedure in which (a) an olefin-containing feed, CO and H are fed into a 1st reaction zone and reacted
in the presence of a catalytic liquid containing dissolved platinum-group metal
compds. with phosphoramide ligands (such as I), whereby this fluid being
brought into contact with a N-containing base, (b) a liquid stream comprising
unreacted olefins, a catalyst and optionally saturated hydrocarbons is separated
from the discharge from the 1st reaction zone and are fed into a 2nd reaction zone.
IT 472986-82-8P
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(olefin hydroformylation catalysts containing platinum-group metal compds. with phosphoramide ligands and N-containing base)
RN 472986-82-8 CAPLUS
CN Phosphorous acid, bis[3-methyl-1H-indol-1-yl]-,
2,4-bis(1,1-dimethylethyl)-
9,9-dimethyl-9H-xanthene-4,5-diyl ester (9CI) (CA INDEX NAME)

L8 ANSWER 10 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)



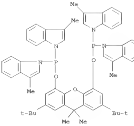
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 11 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:300375 CAPLUS
DOCUMENT NUMBER: 142:375555
TITLE: Manufacture of 1,7-octadiene from cyclohexene and ethylene
INVENTOR(S): Boehm, Volker; Roeper, Michael; Stephan, Juergen; Benfer, Regina; Schubert, Markus; Karl, Joern; Ebel, Klaus; Loeber, Oliver; Volland, Martin
PATENT ASSIGNEE(S): BASF A.-G., Germany
SOURCE: PCT Int. Appl., 85 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005030681	A1	20050407	WO 2004-EP10435	20040917
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10344690	A1	20050414	DE 2003-10344690	20030925
EP 1667950	A1	20060614	EP 2004-765331	20040917
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
CN 1860086	A	20061108	CN 2004-80028057	20040917
JP 2007506691	T	20070322	JP 2006-527323	20040917
MX 2006PA02569	A	20060605	MX 2006-PA2569	20060306
US 20070083066	A1	20070412	US 2006-572077	20060316
IN 2006CN01402	A	20070706	IN 2006-CN1402	20060424
PRIORITY APPLN. INFO.:			DE 2003-10344690 A	20030925
			WO 2004-EP10435 W	20040917

OTHER SOURCE(S): CASREACT 142:375555
AB 1,7-Octadiene is manufactured by catalytic metathesis reaction of cyclohexene with ethylene in a process in which unconverted reactants and, optionally, high-boiling byproducts are returned in purified form to the reaction mixture For example, passing 60 g/h cyclohexene and 80 g/h ethylene through a tubular reactor packed with 40 g catalyst comprising 10% Re_2O_7 on Al_2O_3 and kept at 60° gave, after 15 h, 7.9% conversion to product mixture containing 97.3% 1,7-octadiene and 2.0% 1,7,13-tetradecatriene. Hydroformylation of 1,7-octadiene in presence of Rh complex

L8 ANSWER 11 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)
catalyst (prepn. given) gave 1,10-decanedial which was subjected to aldol condensation with acetone to give a mixt. of dodecanone, tridecanal-12-one and 2,15-hexadecanedione. Intramol. aldol of 2,15-hexadecanedione gave a mixt. of dehydromuscone derivs. which were hydrogenated to give muscone
IT 472986-82-6P
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(hydroformylation catalyst; manufacture of octadiene from cyclohexene and ethylene)
RN 472986-82-6 CAPLUS
CN Phosphinous acid, bis(3-methyl-1H-indol-1-yl)-, 2,7-bis(1,1-dimethylethyl)-9,9-dimethyl-9H-xanthene-4,5-diyl ester (9CI) (CA INDEX NAME)



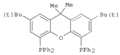
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 12 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:99448 CAPLUS
DOCUMENT NUMBER: 142:179273
TITLE: Two-stage hydroformylation of butenes
INVENTOR(S): Ahlers, Wolfgang; Paciello, Rocco; Zeller, Edgar; Volland, Martin; Flores, Miguel Angel
PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Germany
SOURCE: PCT Int. Appl., 65 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005009934	A2	20050203	WO 2004-EP8209	20040722
WO 2005009934	A3	20050407		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10333519	A1	20050217	DE 2003-10333519	20030723
PRIORITY APPLN. INFO.:			DE 2003-10333519 A	20030723

OTHER SOURCE(S): MARPAT 142:179273
GI

L8 ANSWER 12 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)



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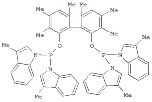
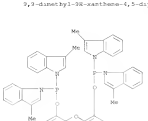


II

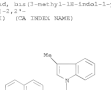
AB Olefins, especially C4 hydrocarbon mixts. containing 1- and 2-butene, are hydroformylated in a 2-stage procedure in which (a) an olefin-containing feed, CO and H are fed into a 1st reaction zone and reacted in the presence of a 1st catalyst system for hydroformylation of 1-butene with higher n-selectivity, (b) a liquid stream comprising unreacted olefins and optionally saturated hydrocarbons is separated from the discharge from the 1st reaction zone, (c) the liquid stream obtained in step (b), CO and H are fed into a 2nd reaction zone and reacted in the presence of a 2nd catalyst system suitable for isomerization hydroformylation of 2-butene with high n-selectivity. The catalysts used for the 1st and 2nd hydroformylation stage are known transition metal compds. and complexes (structures specified). For example, hydroformylation of C4 fraction (raffinate II) with synthesis gas for 4 h at 20 bar and 90° in the presence of $Rh(CO)_2acac$ catalyst with ligand I in the 1st stage gave 1-butene conversion 65% and valeraldehyde yield 15% with 98.4% linearity. Hydroformylation of the latter product for 4 h at 17 bar and 90° with 1:2 CO/H mixture in the presence of $Rh(CO)_2acac$ catalyst with ligand II in the 2nd stage gave 1-butene conversion 84%, 2-butene conversion 38% and valeraldehyde yield 28% with 96.2% linearity.
IT 472986-82-6 832673-33-3 832673-34-4
RL: CAT (Catalyst use); USES (Uses)
(ligand; two-stage hydroformylation of butenes)
RN 472986-82-6 CAPLUS
CN Phosphinous acid, bis(3-methyl-1H-indol-1-yl)-, 2,7-bis(1,1-dimethylethyl)-

L8 ANSWER 12 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)
9,9-dimethyl-9H-xanthene-4,5-diyl ester (9CI) (CA INDEX NAME)



RN 832673-33-3 CAPLUS
CN Phosphinous acid, bis[3-methyl-1H-indol-1-yl]-, [1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



L8 ANSWER 12 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

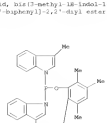
PAGE 2-A

L8 ANSWER 12 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

PAGE 2-A

RN 832673-34-4 CAPLUS
CN Phosphinous acid, bis[3-methyl-1H-indol-1-yl]-, 7,7',6,6'-bisamethyl[1,1'-bipheny]]-2,2'-diyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



L8 ANSWER 13 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:525953 CAPLUS
DOCUMENT NUMBER: 141:89007
TITLE: Procedure for the production of mono pnicogenic compounds
PATENT ASSIGNEE(S): BASF Ag, Germany
SOURCE: Ger. Offen., 76 pp.
CODEN: GWXXEX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10260797	A1	20040701	DE 2002-10260797	20021223

PRIORITY APPLN. INFO.: DE 2002-10260797 20021223

OTHER SOURCE(S): MARPAT 141:89007
GI

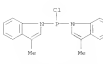
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The present invention concerns new mono pnicogenic compds., R1R2Pn(O)aYOR3
[Pn = pnicogenic atom (P, As, Sb); R1 = pyrrole, indole, dibenzpyrrole (each bonded at N); R2 = alkyl, alkoxy, aryl, aryloxy, cycloalkyl, cycloalkoxy, heterocycloalkyl, heterocycloalkoxy; R1R2 = double-bonded heteratom containing group, with one of R1 and R2 = pyrrole; a = 0, 1; Y = 2-10 atom bridge; R3 = H, alkyl, aryl, cycloalkyl, heterocycloalkyl, heteroaryl, silyl], catalysts from a complex of a group VIII metals (e.g., Co, Ni, Rh, Ru, Ir), a procedure for hydroformylation, and a procedure for the production of 3-propylheptanol over a transition metal complex and a mono pnicogenic compound as ligands under application of these catalysts and further uses of these catalysts. Thus, pnicogenic compound I was prepared from 3-methylindole via reaction with PCl3 in PhMe, followed by esterification with xanthenediol II. Ligand I was then used in the hydroformylation of trans-2-butene with syngas (CO:H2 1:1) over dicarbonylrhodium acetylacetonate togive 67% of the aldehyde.

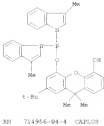
IT 571171-04-5P, Bis(3-methylindol-1-yl)chlorophosphine
RL: RCT (Reactant); SNH (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with xanthene and biphenyl alcs.; preparation of mono pnicogenic compds. as ligands for hydroformylation, aldol condensation and other catalysts)

RN 571171-04-5 CAPLUS
CN Phosphinous chloride, bis(3-methyl-1H-indol-1-yl)- (9CI) (CA INDEX NAME)

L8 ANSWER 13 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

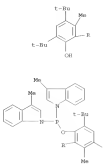


IT 714956-92-7P 714956-94-9P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation of mono pnitogenic compds. as ligands for hydroformylation, aldol condensation and other catalysts)
RN 714956-92-7 CAPLUS
CN Phosphinous acid, bis[3-methyl-1H-indol-1-yl]-, 7-bi(1,1-dimethylethyl)-9-methyl-9H-xanthen-4-yl ester (9CI) (CA INDEX NAME)



RN 714956-94-9 CAPLUS
CN Phosphinous acid, bis[3-methyl-1H-indol-1-yl]-, 3,3',5,5'-tetrakis(1,1-dimethylethyl)-2'-hydroxy-6,6'-dimethyl[1,1'-biphenyl]-2-yl ester (9CI) (CA INDEX NAME)

L8 ANSWER 13 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)



L8 ANSWER 14 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:323572 CAPLUS
DOCUMENT NUMBER: 141:306344
TITLE: Structure, electrochemistry and hydroformylation catalytic activity of the bis(pyrazolylborato)rhodium(I) complexes [RhBp(CO)P] (P = P(NC4H4)3, PPh3, PCy3, P(C6H4OMe-4)3)
AUTHOR(S): Trzeciak, Anna M.; Borak, Beata; Ciunik, Zbigniew; Ziolkowski, Jozef J.; Fatina, M.; Da Silva, C. Guedes;
Pombeiro, Armando J. L.
CORPORATE SOURCE: Faculty of Chemistry, University of Wroclaw, Wroclaw, 50-383, Pol.
SOURCE: European Journal of Inorganic Chemistry (2004), (7), 1411-1419
CODEN: EJTCFG; ISSN: 1434-1948
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 141:306344
AB Rh complexes [RhBp(CO)P] [Bp = bis(pyrazolyl)borate), P = P(NC4H4)3, PPh3
2, PCy3 3, P(C6H4OMe-4)3 4] were prepared by exchange of the acetylacetonato (acac-) ligand in [Rh(acac)(CO)P] complexes. The spectroscopic and electrochem. properties as well as x-ray data of [Rh(acac)(CO)P] and [RhBp(CO)P] complexes were compared with the aim to estimate the relative donor properties of both anionic ligands (acac- and Bp-). The cyclic voltammetric results indicate that the Bp- ligand behaves as a much stronger electron donor than acac- and a value of the Lever EL ligand parameter identical to that of the pyrazolate ligand (-0.24 V vs. normal H electrode for each coordinating arm) is proposed for the bis- and tris(pyrazolyl)borate ligands, whereas P(C6H4OMe-4)3 also has an identical EL value (0.69 V) to that of P(NC4H4)3. An improved linear relation between the oxidation potential and the sum of the ligand EL values for square-planar Rh1 complexes is also obtained and adjusted values for the Lever EM and ZM parameters for the Rh3/Rh2I redox couple are given. The trans influence of phosphines was not observed in crystals of complexes 2 and 3, in contrast to analogous acetylacetonato complexes in which the Rh-O bonds differ by approx. 0.04-0.06 Å. Complexes 3-4 are very attractive precursors for hydroformylation catalysts and yields of aldehydes of 80-87% were obtained with all complexes without extra phosphine as co-catalyst. During the hydroformylation reaction, however, small amts. of a catalytically inactive [RhBp(CO)2] complex were formed.
IT 703053-70-1P
RL: CAT (Catalyst use); CPS (Chemical process); PEP (Physical, engineering or chemical process); PEP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)
(preparation, cyclic voltammetry, and catalyst for hydroformylation of hexenes)
RN 703053-70-1 CAPLUS
CN Rhodium, carbonyl[dihydrobis(1H-pyrazolato-κN)borato(1-)-κN2,κN2'][1,2',1''-[phosphinidyne-κP]tris[1H-pyrrole]]-, (SP-4-2)- (9CI) (CA INDEX NAME)

L8 ANSWER 14 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

PAGE 1-A

PAGE 2-A

IT 60259-30-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(substitution of rhodium(I) acetylacetonate dicarbonyl with bis(pyrazolyl)borate and phosphines)
RN 60259-30-5 CAPLUS
CN 1H-Pyrrole, 1,1',1''-phosphinidynetris- (CA INDEX NAME)

REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 15 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:243746 CAPLUS
DOCUMENT NUMBER: 140:271009
TITLE: Preparation of prinogenic compounds as cocatalysts for transition metal catalyzed hydroformylation reaction
INVENTOR(S): Ahlers, Wolfgang; Volland, Martin; Wiebelhaus, Dag; Paciello, Rocco; Bartsch, Michael
PATENT ASSIGNEE(S): RALF AG, Germany
SOURCE: Ger. Offen., 45 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

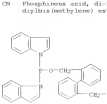
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10234760	A1	20040325	DE 2003-10234760	20030916
PRIORITY APPLN. INFO.:			DE 2002-10243138	A 20020917

OTHER SOURCE(S): CASREACT 140:271009; MARPAT 140:271009
GI

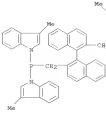
I

AB The present invention concerns preparation of new prinogenic compds., cocatalysts, for transition metal catalyzed hydroformylation reaction. Thus, phosphination of indole with PCl3 in the presence of Et3N in THF followed by condensation with 2,2'-biphenyldimethanol in THF gave 40% title compound 1, which was used as cocatalyst for Rh(CO)2(acac) catalyzed hydroformylation of 1-octene.
IT 674799-90-7P 674799-91-8P 674799-92-9P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);

L8 ANSWER 15 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)
USES (Uses)
(prepn. of aminophosphites as cocatalysts for transition metal catalyzed hydroformylation reaction)
RN 674799-90-7 CAPLUS
CN Phosphorous acid, di-1H-indol-1-yl-, [1,1'-biphenyl]-2,2'-diyl bis(methylene) ester (9CI) (CA INDEX NAME)

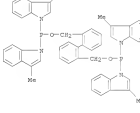


RN 674799-91-8 CAPLUS
CN 1H-Indole, 1,1',1'',1'''-[[1,1'-binaphthalene]-2,2'-diyl(methylenephosphinidyne)]tetrakis[3-methyl- (9CI) (CA INDEX NAME)



RN 674799-92-9 CAPLUS
CN Phosphorous acid, bis[3-methyl-1H-indol-1-yl)-, [1,1'-biphenyl]-2,2'-diylbis(methylene) ester (9CI) (CA INDEX NAME)

L8 ANSWER 15 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

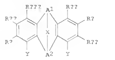


L8 ANSWER 16 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2004:218467 CAPLUS
DOCUMENT NUMBER: 140:270370
TITLE: Procedure for the preparation of aldehydes and/or ethylenically unsaturated mono aldehydes by hydroformylation of ethylenic unsaturated compounds
INVENTOR(S): Volland, Martin; Ahlers, Wolfgang; Ebel, Klaus; Paciello, Rocco; Roeger, Michael; Mackewitz, Thomas; Roehm, Volker; Sava, Xavier; Loeber, Oliver; Rey, Oliver; Stephan, Juergen; Haese, Frank
PATENT ASSIGNEE(S): BASF AG, Germany
SOURCE: Ger. Offen., 21 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10242636	A1	20040318	DE 2002-10242636	20020913
WO 2004026803	A1	20040401	WO 2003-EP10166	20030912
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
AU 2003267548	A1	20040408	AU 2003-267548	20030912
EP 1539666	A1	20050615	EP 2003-748014	20030912
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
CN 1681766	A	20051012	CN 2003-821768	20030912
JP 2006501257	T	20060112	JP 2004-537069	20030912
US 20060025627	A1	20060202	US 2005-527635	20050314
US 7145041	B2	20061205		
PRIORITY APPLN. INFO.:			DE 2002-10242636	A 20020913
			WO 2003-EP10166	W 20030912

OTHER SOURCE(S): CASREACT 140:270370; MARPAT 140:270370
GI

L8 ANSWER 16 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)



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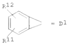
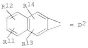




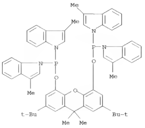
AB A procedure for the production of dialdehydes and/or ethylenic unsatd. mono aldehydes is described by conversion of a compound with at least two ethylenic unsatd. double bonds with carbon monoxide and hydrogen in presence of a hydroformylation catalyst, a complex, of a metal group VIII . Transition metal catalysts containing pnicogen chelate ligands, R1R2Pn(O)aQ(O)bPnR3R4 [Q = I; X = (D)c; A1, A2 = O, S, SiRaRb, NRc, CRdRe; Ra, Rb, Rc, Rd, Re = H, alkyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl; RdRd, ReRe = D; D = CHR9CHR10, CR9:CR10, D1, D2; R9, R10 = H, alkyl, cycloalkyl, aryl, halogen, CF3, CO2H, CO2-, CN; R11, R12, R13, R14 = H, alkyl, cycloalkyl, aryl, halogen, CF3, CO2H, CO2-, CN, alkoxy, SO3H, sulfonate, NE1E2, alkylene-N+E1E2E3X-, acyl, NO2; c = 0, 1; Y = bond; RI, RII, RIII, RIV, RV, RVI = H, alkyl, cycloalkyl, heterocycloalkyl, aryl, heteroaryl, CO2Rf, CO2-M+, SO3Rf, SO3-M+, NE1E2, alkylene-N+E1E2E3X-, ORf, SRf, (CHRgCH2O)xRf, (CH2NE1)x, (CH2CH2NE1)x, halogen, CF3, NO2, acyl, CN; Rf, E1, E2 = H, alkyl, cycloalkyl, aryl; Rg = H, Me, Et; M= = cation; X- = anion; x = 1 - 120; a,b = 0, 1; Pn = pnicogen (P, As, Sb); R1, R2, R3, R4 = heteroaryl, heteroaryloxy, alkyl, alkoxy, aryl, aryloxy, cycloalkyl, cycloalkoxy, heterocycloalkyl, heterocycloalkoxy, NE1E2; etc.] is covered.

IT 472986-82-6P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(hydroformylation pnicogenic chelating ligand; preparation of dialdehydes and/or ethylenic unsatd. monoaldehydes by hydroformylation of ethylenic unsatd. compds.)

RN 472986-82-6 CAPLUS

L8 ANSWER 16 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

CN Phosphinous acid, bis(3-methyl-1H-indol-1-yl)-, 2,7-bis(1,1-dimethylethyl)-9,9-dimethyl-9H-xanthene-4,5-diyl ester (9CI) (CA INDEX NAME)

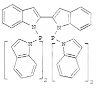


L8 ANSWER 17 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:633719 CAPLUS
DOCUMENT NUMBER: 139:164887
TITLE: Preparation of phosphorus chelate compounds useful as catalysts
INVENTOR(S): Ahlers, Wolfgang; Paciello, Rocco
PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Germany
SOURCE: PCT Int. Appl., 53 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 2003066642	A1	20030814	WO 2003-EP1245		20030207
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW					
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG					
DE 10205361	A1	20030821	DE 2002-10205361		20020208
AU 2003210225	A1	20030902	AU 2003-210225		20030207
PRIORITY APPLN. INFO.:			DE 2002-10205361	A	20020208
			WO 2003-EP1245	W	20030207

OTHER SOURCE(S): CASREACT 139:164887; MARPAT 139:164887
GI



I

AB The invention relates to new phosphorus chelate compds., catalysts containing at least one complex of a metal belonging to subgroup VIII and at least

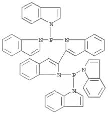
L8 ANSWER 17 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

one such phosphorus chelate compd. as a ligand, and a hydroformylation method using said catalysts. Thus, reaction of o-toluidine with oxalyl chloride in the presence of Et3N in THF gave 65% N,N-bis-o-tolyloxamide which on treatment with KOBu-t gave 50% bisindolyl.
Reaction of bisindolyl with PCl3 in the presence of Et3N and indole gave title phosphorus compd. I. Rh(CO)2(acac)/I catalyzed hydroformylation of 1-butene/2-butene/butane mixt. gave aldehyde with 92% linear selectivity.

IT 577786-39-1P
RL: CAT (Catalyst use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation of phosphorus chelate compds. useful as catalysts)

RN 577786-39-1 CAPLUS

CN 2,2'-Bi-1H-indole, 1,1'-bis(di-1H-indol-1-ylphosphino)- (CA INDEX NAME)



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 18 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:591192 CAPLUS
DOCUMENT NUMBER: 139:149757
TITLE: Method for the separation of acids from chemical reaction mixtures by means of ionic fluids
INVENTOR(S): Volland, Martin; Seitz, Verena; Maase, Matthias; Flores, Miguel; Papp, Rainer; Massonne, Klemens; Stegmann, Veit; Halbritter, Klaus; Noe, Ralf; Bartsch, Michael; Siegel, Wolfgang; Becker, Michael; Huttenloch, Oliver
PATENT ASSIGNEE(S): Basf Aktiengesellschaft, Germany
SOURCE: PCT Int. Appl., 111 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

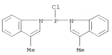
PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 2003062251	A1	20030731	WO 2003-EP549		20030121
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW					
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG					
DE 10202838	A1	20030807	DE 2002-10202838		20020124
DE 10230222	A1	20040122	DE 2002-10230222		20020704
DE 10248902	A1	20040429	DE 2002-10248902		20021018
DE 10251140	A1	20040513	DE 2002-10251140		20021031
CA 2473954	A1	20030731	CA 2003-2473954		20030121
EP 1470136	A1	20041027	EP 2003-704443		20030121
EP 1470136	B1	20070328			
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK					
JP 2005515258	T	20050526	JP 2003-562128		20030121
CN 1622948	A	20050601	CN 2003-802742		20030121
AT 358134	T	20070415	AT 2003-704443		20030121
ES 2283749	T3	20071101	ES 2003-704443		20030121
CN 101157592	A	20080409	CN 2007-10166633		20030121
US 20050020857	A1	20050127	US 2004-500145		20040709
ZA 2004006664	A	20060628	ZA 2004-6664		20040823
US 20080083606	A1	20080410	US 2007-952242		20071207
PRIORITY APPLN. INFO.:			DE 2002-10202838	A	20020124
			DE 2002-10230222	A	20020704
			DE 2002-10248902	A	20021018
			DE 2002-10251140	A	20021031
			CN 2003-802739	A3	20030121
			WO 2003-EP549	W	20030121
			US 2004-500145	A3	20040709

L8 ANSWER 18 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

OTHER SOURCE(S): CASREACT 139:149757; MARPAT 139:149757

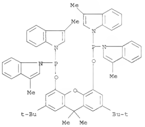
AB Disclosed is a method for producing aminodihalophosphines, diaminohalophosphines, triaminophosphines, phosphite diamides, aminophosphines, diaminophosphines, phosphite amide halogenides, and aminophosphine halogenides by separating an acid in the presence of an auxiliary base. Said auxiliary base (b) forms a salt with an acid, which is liquid at temps. at which the valuable product is not significantly decomposed during separation of the liquid salt, and (c) the salt of the auxiliary base and the valuable product or the solution of the valuable product form two immiscible phases in a suitable solvent. Thus, reaction of dichloro(phenyl)phosphine with EtOH in presence of 1-methylimidazole (auxiliary base) followed by separation of immiscible 1-methylimidazole containing ionic liquid gave up to 96% of diethoxyphenylphosphine.

IT 571171-04-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(method for separation of acids with auxiliary base from chemical reaction mixts. by means of ionic fluids in organic synthesis)
RN 571171-04-5 CAPLUS
CN Phosphinous chloride, bis(3-methyl-1H-indol-1-yl)- (9CI) (CA INDEX NAME)



IT 472986-82-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(method for separation of acids with auxiliary base from chemical reaction mixts. by means of ionic fluids in organic synthesis)
RN 472986-82-6 CAPLUS
CN Phosphinous acid, bis(3-methyl-1H-indol-1-yl)-, 2,7-bis(1,1-dimethylethyl)-9,9-dimethyl-9H-xanthene-4,5-diyl ester (9CI) (CA INDEX NAME)

L8 ANSWER 18 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)



REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

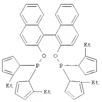
L8 ANSWER 19 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:173502 CAPLUS
DOCUMENT NUMBER: 138:206869
TITLE: Method for the manufacture of 2-propylheptanol and novel hydroformylation catalyst
INVENTOR(S): Ahlers, Wolfgang; Paciello, Rocco; Mackewitz, Thomas; Volland, Martin
PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Germany
SOURCE: PCT Int. Appl., 66 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 2003018192	A2	20030306	WO 2002-EP9455		20020823
WO 2003018192	A3	20031113			
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW					
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG					
AU 2002324067	A1	20030310	AU 2002-324067		20020823
PRIORITY APPLN. INFO.:			DE 2001-10141494	A	20010824
			WO 2002-EP9455	W	20020823

OTHER SOURCE(S): MARPAT 138:206869

GI



I

AB A method for the manufacture of 2-propylheptanol, useful for production of ester

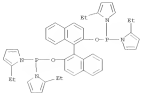
L8 ANSWER 19 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)
plasticizers, comprises hydroformylation of butene, aldol condensation of the resulting hydroformylation product contg. valeraldehyde, and hydrogenation of aldol condensate to the alc., in the presence of complex catalyst comprising group VIII metal and pyrrole deriv. contg. ligands. The storage stability of the ligands was enhanced by introducing suitable substituents into the pyrrole ring. For example, hydrogenation of 1-octene with synthesis gas (10 bar) for 4 h at 100° in the presence of Rh(CO)2acac and ligand I (prepn. from 2,3'-dihydroxy-1,1'-biphenyl and 2-ethylpyrrole given) which was stored for 30 days at ambient temp. under Ar proceeded with conversion 92%, the aldehyde selectivity 60%, linearity 89% and selectivity for inner olefins 40%, vs. 90, 59, 99 and 46%, resp., for analogous expt. in which the catalyst comprised a similar ligand contg. unsubstituted pyrrole rings.

IT 179811-77-9
RL: CAT (Catalyst use); USES (Uses)
(storage-stable hydroformylation catalyst for manufacture of propylheptanol)

RN 179811-77-9 CAPLUS
CN 1H-Indole, 1,1',1''-phosphinidynetris- (CA INDEX NAME)

IT 1QU582-95-6P
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(storage-stable hydroformylation catalyst for manufacture of propylheptanol)

RN 1QU582-95-6 CAPLUS
CN Phosphinous acid, bis[2-ethyl-1H-pyrrol-1-yl]-, [1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)



L8 ANSWER 20 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2003:56043 CAPLUS
DOCUMENT NUMBER: 138:108631
TITLE: Manufacture of saturated aliphatic C3-30 carboxylic acids from butenes
INVENTOR(S): Buehler, Holger; Papp, Rainer; Maas, Heiko; Slany, Michael; Breuer, Klaus; Ahlers, Wolfgang
PATENT ASSIGNEE(S): BASF AG, Germany
SOURCE: Ger. Offen., 20 pp.
CODEN: GWXEN
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

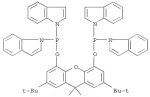
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10239134	A1	20030123	DE 2002-10239134	20020827
PRIORITY APPLN. INFO.:			DE 2002-10239134	20020827

OTHER SOURCE(S): MARPAT 138:108631
AB The title acids are manufactured by (a) optionally converting 1-butene, cis-2-butene and/or trans-2-butene by metathesis and/or oligomerization into a mixture of C2-20 alkenes, (b) converting 1-butene, cis-2-butene and/or trans-2-butene (or mixture of C2-29 alkenes) by hydroformylation into C3-30 alkanals, and (c) converting C3-30 alkanals by oxidation into saturated aliphatic C3-30 carboxylic acids. The hydroformylation step is carried out with CO/H in the presence of catalysts comprising group VIII-group 10 metal complexes with polyethyleneimine derivs. or P-containing compds. as chelating agents. For example, metathesis reaction of butadiene-free C4 fraction containing 84.2 wt% butenes in the presence of Re207/Al2O3 catalyst gave a mixture of C2-6 alkenes containing 19.4% 2-pentene and 10.3% 3-hexene, which were isolated by distillation. Hydroformylation of 3-hexene in the presence of Rh(CO)2(acac) catalyst (acac = acetylacetonate) and polyethyleneimine lauric acid amide (preparation given) gave a mixture containing n-heptanal 22.9, 2-methylhexanal 41.2 and 2-ethylpentanal 31.4%. The conversion of 3-hexene was 99%. Oxidation of the latter mixture with air in the presence of KOH gave a product containing 91% of a mixture of heptanoic acid, 2-methylhexanoic acid and 2-ethylpentanoic acid. The conversion of heptanals was 92%.

IT 472984-80-4 486999-34-2
RL: CAT (Catalyst use); USES (Uses)
(hydroformylation catalyst component; manufacture of saturated aliphatic C3-30 carboxylic acids from butenes)

RN 472984-80-4 CAPLUS
CN Phosphinous acid, di-1H-indol-1-yl-, 2,7-bis(1,1-dimethylethyl)-9,9-dimethyl-9H-xanthene-4,5-diyl ester (9CI) (CA INDEX NAME)

L8 ANSWER 20 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)



RN 486999-34-2 CAPLUS
CN Phosphinous acid, bis[2-methyl-1H-indol-1-yl]-, 2,7-bis(1,1-dimethylethyl)-9,9-dimethyl-9H-xanthene-4,5-diyl ester (9CI) (CA INDEX NAME)

PAGE 1-A

PAGE 2-A

L8 ANSWER 20 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)
IT 472986-77-9
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(manufacture of saturated aliphatic C3-30 carboxylic acids from butenes)
RN 472986-77-9 CAPLUS
CN Phosphinous acid, di-1H-pyrrol-1-yl-, 2,7-bis(1,1-dimethylethyl)-9,9-dimethyl-9H-xanthene-4,5-diyl ester (9CI) (CA INDEX NAME)

L8 ANSWER 21 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:81453 CAPLUS
DOCUMENT NUMBER: 137:311033
TITLE: Ligands for pnicogen chelate complexes with a metal of subgroup VIII and use of the complexes as catalysts for hydroformylation, carbonylation, hydrocyanation or hydrogenation
INVENTOR(S): Ahlers, Wolfgang; Zarbello, Rocco; Vogt, Dieter; Hofmann, Peter
PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Germany
SOURCE: PCT Int. Appl., 85 pp.
CODEN: PIXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002083695	A1	20021024	WO 2002-EP3543	20020328
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2442039	A1	20021024	CA 2002-2442039	20020328
AU 2002308111	A1	20021028	AU 2002-308111	20020328
EP 1383777	A1	20040128	EP 2002-761895	20020328
EP 1383777	B1	20051116		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2004531528	T	20041014	JP 2002-581450	20020328
AT 310007	T	20051215	AT 2002-761895	20020328
ES 2253552	T3	20060601	ES 2002-761895	20020328
CN 1843989	A	20061115	CN 2002-807591	20020328
US 20040110960	A1	20040610	US 2003-473316	20030929
US 7173138	B2	20070206		
PRIORITY APPLN. INFO.:			DE 2001-10115689	A 20010329
			DE 2001-10141494	A 20010824
			WO 2002-EP3543	W 20020328

OTHER SOURCE(S): CASREACT 137:311033; MARPAT 137:311033
GI

I

AB The invention relates to pnicogen chelate compds. that have two groups, which contain pnicogen atoms, and are bound to one another via an xanthene-like or triptycene-like mol. skeleton. At least one pyrrole group is covalently bound via its nitrogen atom to each pnicogen atom. The invention also relates to catalysts consisting of a complex of a metal from subgroup VIII with at least one pnicogen compound serving as a ligand, and to a method for hydroformylating olefins. Thus, phosphination of pyrrol with PCl3 in the presence of Et3N in THF gave chlorobis(pyrrolyl)phosphine which on treatment with lithiated 2,8-dibromo-5,6-di-tert-butylxanthene gave 13% title monodentate I. Rh/CO/I-acac catalyzed hydroformylation of butene/butane (65% 1-butene, 40% 2-butenes, 15% butane) mixture in the presence of ligand I with synthesis gas (CO:H2) gave 47% aldehyde with 96% linear selectivity.
IT 60259-30-5 247130-62-7 472986-80-6
472986-81-5 472986-86-0
RL: CAT (Catalyst use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(ligands for pnicogen chelate complexes with subgroup VIII metal and use of complexes as catalysts for hydroformylation, carbonylation, hydrocyanation or hydrogenation)
RN 60259-30-5 CAPLUS
CN 1H-Pyrrole, 3,3',3''-phosphinidynetris- (CA INDEX NAME)

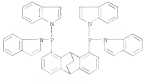
RN 247130-62-7 CAPLUS
CN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-[1,1'-binaphthalene]-2,2'-diyl ester (CA INDEX NAME)

L8 ANSWER 21 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

RN 472986-80-6 CAPLUS
CN Phosphinous acid, di-1H-indol-1-yl-, 2,7-bis(1,1-dimethylethyl)-9,9-dimethyl-9H-xanthene-4,5-diyl ester (9CI) (CA INDEX NAME)

RN 472986-81-5 CAPLUS
CN Phosphinic acid, di-1H-indol-1-yl-, 9,10-dihydro-9,10-ethanoanthracene-1,8-diyl ester (9CI) (CA INDEX NAME)

L8 ANSWER 21 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)
RN 472986-56-0 CAPLUS
CN 1H-Indole, 3,3',3'',3'''-[9,10-dihydro-9,10-ethanoanthracene-1,8-diyldi(diphosphinidene)]tetrakis- (9CI) (CA INDEX NAME)

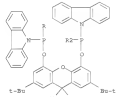


IT 345999-78-6P
RL: RCT (Reactant); RPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction in preparation of ligand for rhodium catalyzed
hydroformylation)
RN 345999-78-6 CAPLUS
CN Phosphinous chloride, P,P-di-1H-pyrrol-1-yl- (CA INDEX NAME)

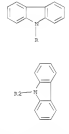
IT 472986-76-8P 472986-77-9P 472986-78-0P
472986-79-1P 472986-82-6P 472986-83-7P
472986-85-9P
RL: CAT (Catalyst use); RCT (Reactant); RPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation of ligands for pnicogen chelate complexes with subgroup
VIII
metal and use of complexes as catalysts for hydroformylation, carboxylation, hydrocyanation or hydrogenation)
RN 472986-76-8 CAPLUS
CN 1H-Pyrrole, 1,1',1'',1'''-[[2,7-bis[1,1-dimethylethyl]-9,9-dimethyl-9H-xanthene-4,5-diyl]bis(phosphinidene)]tetrakis- (9CI) (CA INDEX NAME)

L8 ANSWER 21 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)
CN Phosphinous acid, di-9H-carbazol-9-yl-, 2,7-bis[1,1-dimethylethyl]-9,9-dimethyl-9H-xanthene-4,5-diyl ester (9CI) (CA INDEX NAME)

PAGE 1-A

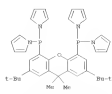


PAGE 2-A

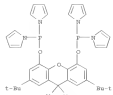


RN 472986-82-6 CAPLUS
CN Phosphinous acid, bis[3-methyl-1H-indol-1-yl)-, 2,7-bis[1,1-dimethylethyl]-9,9-dimethyl-9H-xanthene-4,5-diyl ester (9CI) (CA INDEX NAME)

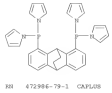
L8 ANSWER 21 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)



RN 472986-77-9 CAPLUS
CN Phosphinous acid, di-1H-pyrrol-1-yl-, 2,7-bis[1,1-dimethylethyl]-9,9-dimethyl-9H-xanthene-4,5-diyl ester (9CI) (CA INDEX NAME)

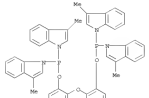


RN 472986-78-0 CAPLUS
CN 1H-Pyrrole, 1,1',1'',1'''-[9,10-dihydro-9,10-ethanoanthracene-1,8-diyldi(diphosphinidyne)]tetrakis- (9CI) (CA INDEX NAME)

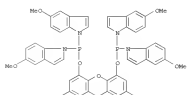


RN 472986-79-1 CAPLUS

L8 ANSWER 21 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

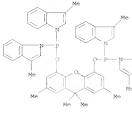


RN 472986-83-7 CAPLUS
CN Phosphinous acid, bis[5-methoxy-1H-indol-1-yl)-, 2,7-bis[1,1-dimethylethyl]-9,9-dimethyl-9H-xanthene-4,5-diyl ester (9CI) (CA INDEX NAME)



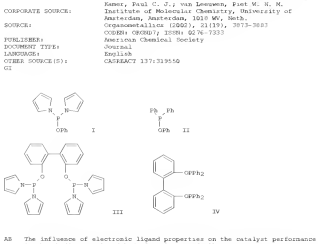
RN 472986-85-9 CAPLUS
CN Phosphinous acid, bis[3-methyl-1H-indol-1-yl)-, 2,7,9,9-tetramethyl-9H-xanthene-4,5-diyl ester (9CI) (CA INDEX NAME)

L8 ANSWER 21 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)



REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

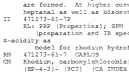
L8 ANSWER 22 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:617995 CAPLUS
DOCUMENT NUMBER: 137:319550
TITLE: Rhodium-Catalyzed Hydroformylation and Deuterioformylation with Pyrrolyl-Based Phosphorus Amidite Ligands: Influence of Electronic Ligand Properties
AUTHOR(S): van der Slot, Saskia C.; Duran, Joaopy Luten, Jordy; Samen, Paul C. J.; van Leeuwen, Piet W. N. M.
CORPORATE SOURCE: Institute of Molecular Chemistry, University of Amsterdam, Amsterdam, 1018 WV, Neth.
SOURCE: Organometallics (2002), 21(19), 3873-3883
CODEN: ORGND7; ISSN: 0276-7333
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 137:319550
GI



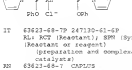
AB The influence of electronic ligand properties on the catalyst performance in the rhodium-catalyzed hydroformylation of alkenes was investigated. Two bidentate phosphorus amidite and phosphinite ligands were synthesized: 1,1'-biphenyl-2,2'-diyl-bis(dipyrrolylphosphoramidite) (III) and 1,1'-biphenyl-2,2'-diyloxy-bis(diphenylphosphinite) (IV). Their monodentate analogs also were studied: phenyldipyrrolylphosphoramidite (I) and Ph diphenylphosphinite (II). These two sets of ligands have very similar steric properties but the amidites are much stronger π-acceptor ligands. Spectroscopic studies showed that under hydroformylation reaction conditions the monodentate ligands I and II form mixts. of HRhL2(CO)2 and HRhL3(CO) complexes depending on the ligand and rhodium concns. and the carbon monoxide pressure. Depending on the reaction

L8 ANSWER 22 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)
conditions, the bidentate ligands III and IV form mixts. of HRh(L-L)(CO)2 and HRh(L-L)(L-L') (CO), where L-L' functions as a monodentate. All ligands were tested in the hydroformylation reaction of oct-1-ene. A high π-acidity of the ligand resulted in a high rate of hydroformylation. The monodentate ligands I and II showed moderate selectivity for the linear aldehyde. The catalyst formed with the bidentate phosphorus amidite ligand III revealed high regioselectivity for the linear aldehyde (ratio l/b .aimeq.100) at a high rate together with a moderate selectivity for isomerisation (.apprx.7%). Deuteriumformylation expts. of 1-hexene showed that the hydride (deuteride) migration is reversible in the hydroformylation system formed by III. Surprisingly, both the linear rhodium-alkyl and the branched rhodium-alkyl complex undergo β-hydride elimination. Also, the 2-hexylrhodium intermediate regenerates more often monodeuterated 1-hexene than 2-hexene. The rhodium hydride species formed this way reacts relatively slowly with the excess of D2 and as a result large amts. of monodeuterated heptanal (45% D1 vs. 6% D2) and monodeuterated 1-hexene are formed. At higher conversions the latter gives trideuterated heptanal as well as bisdeuterated heptanal.

IT 471273-61-7P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and TR spectra in relation to phosphorus ligand π-acidity as
model for rhodium hydroformylation catalysts)
RN 471273-61-7 CAPLUS
CN Rhodium, carbonylchlorobis(phenyl di-1H-pyrrol-1-ylphosphinite-κP)-, (SP-4-3)- (9CI) (CA INDEX NAME)



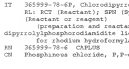
IT 63623-68-7P 247130-61-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and complexation with rhodium to give hydroformylation catalysts)
RN 63623-68-7 CAPLUS
CN Phosphinous acid, di-1H-pyrrol-1-yl-, phenyl ester (9CI) (CA INDEX NAME)



RN 247130-61-6 CAPLUS
CN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-[1,1'-biphenyl]-2,2'-diyl

L8 ANSWER 22 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)
ester (CA INDEX NAME)

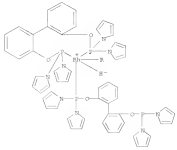
IT 365999-78-6P, Chlorodipyrrol-1-ylphosphine
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reactant for preparation of dipyrrolylphosphorodiamidite ligands for rhodium hydroformylation catalysts)
RN 365999-78-6 CAPLUS
CN Phosphinous chloride, P,P-di-1H-pyrrol-1-yl- (CA INDEX NAME)



IT 471273-69-5P 471273-81-1P 471273-83-3P 471273-86-6P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation of rhodium hydrido dipyrrolylphosphorodiamidite and diphenylphosphanite complexes and catalytic activity for regioselective hydroformylation of alkenes)
RN 471273-69-5 CAPLUS
CN Rhodium, [[1,1'-biphenyl]-2,2'-diyl bis(di-1H-pyrrol-1-ylphosphinite-κP)]carbonyl[2'-[(di-1H-pyrrol-1-ylphosphino)oxy][1,1'-biphenyl]-2-yl di-1H-pyrrol-1-ylphosphinite-κP]hydro-, (TB-5-54)- (9CI) (CA INDEX NAME)

L4 ANSWER 22 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

PAGE 1-A

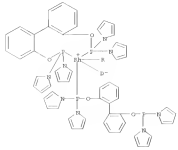


PAGE 2-A

RN 471273-91-1 CAPLUS
CN Rhodium, [(1,1'-biphenyl]-2,2'-diyl bis[di-1H-pyrrol-1-ylphosphinite-κP]carbonyl2[2'-[di-1H-pyrrol-1-ylphosphino)oxy][1,1'-biphenyl]-2-yl di-1H-pyrrol-1-ylphosphinite-κP]hydro-6-, (TB-5-34)- (9CI) (CA INDEX NAME)

L8 ANSWER 22 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

PAGE 1-A



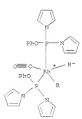
PAGE 2-A

RN 471273-83-3 CAPLUS
CN Rhodium, dicarbonylhydrobis[phenyl di-1H-pyrrol-1-ylphosphinite-κP]-, (TB-5-23)- (9CI) (CA INDEX NAME)

L8 ANSWER 22 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

RN 471273-88-8 CAPLUS
CN Rhodium, carbonylhydrotris[phenyl di-1H-pyrrol-1-ylphosphinite-κP]-, (TB-5-23)- (9CI) (CA INDEX NAME)

PAGE 1-A



L8 ANSWER 22 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

PAGE 2-A

REFERENCE COUNT: 54 THERE ARE 54 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 23 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:113848 CAPLUS
DOCUMENT NUMBER: 136:167504
TITLE: Preparation of thermally stable bidentate phosphorus ligands and their use in catalyst compositions for hydroformylation of olefins
INVENTOR(S): Casanieu, Thierry; Riris, Jerome; Urata, Takao
PATENT ASSIGNEE(S): Mitsubishi Chemical Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 51 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

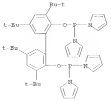
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002047294	A	20020212	JP 2000-228821	20000728
PRIORITY APPLN. INFO.:			JP 2000-228821	20000728

OTHER SOURCE(S): CASREACT 136:167504; MARPAT 136:167504
GI

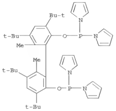
* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Olefins are treated with CO and H in the presence of Group VIII metal compds. and Z1Z2POAr1Ar2OPZ3Z4 [Ar1Ar2 = Q1, Q2; R1-R3, R6-R8, R9-R13, R16-R20 = H, alkyl, alkoxy, aryl, cyano, OH, halo, etc.; R4, R5, R14, R15 = (cyclo)alkyl, (cyclo)alkoxy, (un)substituted silyl, etc.; Z1-Z4 = 5-membered (condensed) heterocycle containing N, which is bonded to the P of the ligands] to prepare aldehydes, which may be (dimerized and) hydrogenated to converted into alcs. Thus, 3,3',5,5'-tetra-tert-butyl-6,6'-dimethyl-2,2'-biphenol was refluxed with BuLi in THF and then added dropwise to a solution of di(1-pyrrolyl)chlorophosphine in MePh to give the corresponding adduct I in 19% yield. Propylene was then hydroformylated in the presence of [Rh(cod)(OAc)]2 and the ligand I at 70° and 4 kg/cm2 to give 100.9:1 n-:iso-butyraldehyde in 94.8% yield. No decomposition of the ligand was observed
IT 397886-87-2
RL: CAT (Catalyst use); USES (Uses)
(preparation of thermally stable bidentate phosphorus ligands for use in catalyst compns. for hydroformylation of olefins)
RN 397886-87-2 CAPLUS
CN 1H-Pyrrole, 1,1',1'',1'''-[[3,3',5,5'-tetrakis(1,1-dimethylethyl)[1,1'-biphenyl]-2,2'-diyl]bis(oxyphosphinidyne)]tetrakis- (9CI) (CA INDEX NAME)

L8 ANSWER 23 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

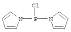


IT 397886-86-1P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation of thermally stable bidentate phosphorus ligands for use in catalyst compns. for hydroformylation of olefins)
RN 397886-86-1 CAPLUS
CN 1H-Pyrrole, 1,1',1'',1'''-[[3,3',5,5'-tetrakis(1,1-dimethylethyl)-6,6'-dimethyl[1,1'-biphenyl]-2,2'-diyl]bis(oxyphosphinidyne)]tetrakis- (9CI) (CA INDEX NAME)

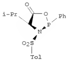


IT 365999-78-6P, Di-1-pyrrolylchlorophosphine
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of thermally stable bidentate phosphorus ligands for use in catalyst compns. for hydroformylation of olefins)
RN 365999-78-6 CAPLUS

L8 ANSWER 23 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)
CN Phosphinous chloride, P,P-di-1H-pyrrol-1-yl- (CA INDEX NAME)



L8 ANSWER 24 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:899582 CAPLUS
DOCUMENT NUMBER: 136:183886
TITLE: Electron-Withdrawing Phosphine Compounds in Hydroformylation Reactions. 1. Syntheses and Reactions Using Mono- and Bis(p-toluenesulfonylamino) Phosphines
AUTHOR(S): Magee, Matthew P.; Luo, Wei; Hersh, William H.
CORPORATE SOURCE: Department of Chemistry and Biochemistry, The Graduate Center, Queens College, City University of New York, Flushing, NY, 11367-1597, USA
SOURCE: Organometallics (2002), 21(2), 362-372
CODEN: ORGND7; ISSN: 0276-7333
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 136:183886
GI



I

AB The rhodium-catalyzed hydroformylation of 1-hexene has been examined in the presence of members of a new class of electron-withdrawing phosphorus ligands, the N-sulfonylphosphoramides. All of the phosphorus compds. in this initial study contain one or two p-toluenesulfonylamino (TsN) groups attached to the phosphorus atom, including three compds. that have been described previously, TosL (1), a monophosphorus compound with two TsN groups, diTosL (2), a diphosphorus compound with one TsN group on each phosphorus atom, and I (3), a chiral acid-derived ligand with one TsN and one O-acyl group on phosphorus. In addition, two new chelating analogs of 1 containing two- and four-carbon bridges between the phosphorus atoms

[P,P'-1,2-ethanediylbis(1,3-di-p-toluenesulfonyl-1,3,2-diazaphospholidine) (5), P,P'-1,4-butanediylbis(1,3-di-p-toluenesulfonyl-1,3,2-diazaphospholidine) (7)], an analog of 1 with an Et instead of a Ph group on phosphorus (8), a nonchelating monophosphorus analog of 2 (10), and a monophosphorus adduct of the ditosylate of o-phenylenediamine (12) have been synthesized and used in hydroformylations, and comparison reactions with PPh3 in THF, toluene, and CH2Cl2 have been run. The 13C NMR spectra

L8 ANSWER 24 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)
of 5 and 7 and related diphosphorus compds. have been exmd. for evidence of false AA'X spectra in which the chem. shifts of the nominally equiv. phosphorus atoms are split by the presence of a single 13C atom. The chelating compd. 2 is by far the most effective hydroformylation ligand, giving high turnover frequencies (TOF) and linear to branched (n:i) ratios of the aldehyde product. Reactions of 2 at a 1000:10:1 ratio of 1-hexene:rh2h(co)(c)(CO)2 at 80 psi CO/H2 at 60° in THF gave TOF = 440 mol aldehyde/mol Rh/h and an n:i ratio of 10, and at 90° gave TOF = 760 and an n:i ratio of 15.8. Reactions with 2 were also run in toluene, giving similar results, and in CH2Cl2, giving rise to higher n:i ratios (up to 28.5) but also to faster catalyst deactivation. In the absence of chelation, 2 gave lower turnover frequencies (TOF) and linear-to-branched ratios (n:i), and 1 and 2 also gave lower TOF values and low n:i ratios similar to those of PPh3 and 10. The chelating analogs of 1, 5 and 7, were very poor ligands and gave ni ration characteristic of monophosphorus ligands. Compds. 8 and 12 inhibit all reaction.
IT 60259-30-5
RL: CAT (Catalyst use); USES (Uses)
(cocatalysts; electron-withdrawing phosphine compds. as cocatalysts in rhodium catalyzed hydroformylation reactions and synthesis and reactions using mono- and bis(tolumesulforylamino) phosphines)
RN 60259-30-5 CAPLUS
CN 1H-Pyrrole, 1,1',1''-phosphinidynetris- (CA INDEX NAME)

REFERENCE COUNT: 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE
FORMAT

L8 ANSWER 25 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:790431 CAPLUS
DOCUMENT NUMBER: 136:199931
TITLE: Synthesis of pyrrolyl-, indolyl-, and carbazolylphosphanes and their catalytic application as ligands in the hydroformylation of 2-pentene
AUTHOR(S): Jackstell, Ralf; Klein, Holger; Beller, Matthias; Wiese, Klaus-Diether; Rottger, Dirk
CORPORATE SOURCE: Institut fur Organische Katalyseforschung (IFOK) an der Universitat Rostock e.V., Rostock, 18055, Germany
SOURCE: European Journal of Organic Chemistry (2001), (20), 3871-3877
CODEN: EJOCFY; ISSN: 1434-193X
PUBLISHER: Wiley-VCH Verlag GmbH
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 136:199931
AB The synthesis of π-acceptor ligands of the type PArxR3-x (x = 0-2; R = pyrrolyl, indolyl, carbazolyl; Ar = aryl) and P(pyrrolyl)2(carbazolyl) is described. Ligands included 1,1',1''-phosphinidynetris[1H-pyrrole], 1,1',1''-phosphinidynetris[1H-indole], 1,1',1''-phosphinidynetris[9H-carbazole] and derivs. thereof. These ligands can be prepared in good to excellent yields by treatment of the corresponding fres heterocyclic anions with phosphorus chlorides in the presence of base. The utilization of pyrrolyl-, indolyl-, and carbazolylphosphanes in the rhodium-catalyzed hydroformylation of 2-pentene demonstrates the influence of the ligand π-acidity on regioselectivity and activity in the hydroformylation of internal olefins. In general, increasing π-acidity of the ligand results in an increased yield of the linear ald product. The best n:iso ratios of about 60:40 are obtained at low synthesis gas pressure (10 bar) in the presence of P(pyrrolyl)3 ligand.
IT 22859-58-1P 54005-90-0P 54006-05-2P
60259-30-5P 179611-77-9P 192935-58-3P
280614-26-4P 358640-82-1P 401471-40-7P
401471-41-8P 401471-42-9P 401471-43-0P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation of pyrrolyl-, indolyl-, and carbazolylphosphanes and their use as ligands in hydroformylation of 2-pentene)
RN 22859-58-1 CAPLUS
CN 1H-Indole, 1-(diphenylphosphino)- (CA INDEX NAME)

L8 ANSWER 25 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

RN 54006-01-2 CAPLUS
CN 1H-Pyrrole, 1,1''-(phenylphosphinidene)bis- (CA INDEX NAME)

RN 60259-30-5 CAPLUS
CN 1H-Pyrrole, 1,1',1''-phosphinidynetris- (CA INDEX NAME)

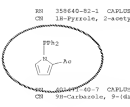
RN 179611-77-9 CAPLUS
CN 1H-Indole, 1,1',1''-phosphinidynetris- (CA INDEX NAME)

RN 192935-58-3 CAPLUS
CN 1H-Pyrrole-2,4-dicarboxylic acid, 1-(diphenylphosphino)-, diethyl ester (9CI) (CA INDEX NAME)

L8 ANSWER 25 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

RN 280614-26-4 CAPLUS
CN 9H-Carbazole, 9,9',9''-phosphinidynetris- (9CI) (CA INDEX NAME)

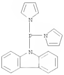
RN 358640-82-1 CAPLUS
CN 1H-Pyrrole, 2-acetyl-1-(diphenylphosphino)- (9CI) (CA INDEX NAME)



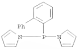
RN 401471-40-7 CAPLUS
CN 9H-Carbazole, 9-(diphenylphosphino)- (CA INDEX NAME)

RN 401471-41-8 CAPLUS
CN 9H-Carbazole, 9-(di-1H-pyrrol-1-ylphosphino)- (CA INDEX NAME)

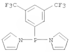
L8 ANSWER 25 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)



RN 401471-42-9 CAPLUS
CN 1H-Pyrrole, 1,1'-([1,1'-biphenyl]-2-ylphosphinidene)bis- (9CI) (CA INDEX NAME)

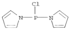


RN 401471-43-0 CAPLUS
CN 1H-Pyrrole, 1,1'-[[3,5-bis(trifluoromethyl)phenyl]phosphinidene]bis- (9CI) (CA INDEX NAME)



IT 365999-78-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of pyrrolyl-, indolyl-, and carbazolylphosphanes and their use as ligands in hydroformylation of 2-pentene)
RN 365999-78-6 CAPLUS
CN Phosphinous chloride, P,P-di-1H-pyrrol-1-yl- (CA INDEX NAME)

L8 ANSWER 25 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

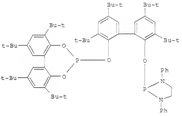


REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 26 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2001:97072 CAPLUS
DOCUMENT NUMBER: 134:116071
TITLE: Preparation and application of organo-phosphine compounds in catalyst system
INVENTOR(S): Guo, Haoran; Wang, Yunlin; Jia, Dongli; Wang, Honghong; Liu, Wu; Liang, Xin
PATENT ASSIGNEE(S): Beijing Chemical Inst., Ministry of Chemical Industry, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 22 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1258676	A	20000705	CN 1998-126382	19981230
CN 1072673	B	20011010		
PRIORITY APPLN. INFO.:			CN 1998-126382	19981230

OTHER SOURCE(S): CASREACT 134:116071; MARPAT 134:116071
GI

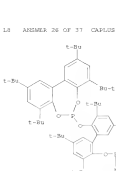


I

AB Title compds. [A1(O)OPOAOPZZ1]; A and/or A1 = C2-10 alkylene or C6-30 arylene; Z, Z1 = C1-10 alkylamino, C6-10 arylamine, or nitrogen-containing heterocyclic group; Z-Z1 = ring form; preferably 2-bis(diisopylamino)phosphinooxy-3,3',5,5'-tetra-tert-butyl-2'-[4,4',6,6'-tetra-tert-butyl-2,2'-biphenyldioxyphosphinooxy]-1,1'-biphenyl, 2-bis(N-methylphenylamino)phosphinooxy-3,3',5,5'-tetra-tert-butyl-2'-[4,4',6,6'-tetra-tert-butyl-2,2'-biphenyldioxyphosphinooxy]-1,1'-biphenyl, 2-bis(4- morpholinyl)phosphinooxy-3,3',5,5'-tetra-tert-butyl-2'-[4,4',6,6'-tetra-tert-butyl-2,2'-biphenyldioxyphosphinooxy]-1,1'-biphenyl, 2- bis(4-morpholinyl)phosphinooxy-5,5'-di-tert-butyl-3,3'-

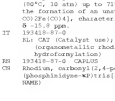
L8 ANSWER 26 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)
dimethoxy- 2'-[6,6'-di-tert-butyl-4,4'-dimethoxy-2,2'-biphenyldioxyphosphinooxy]-1,1'-biphenyl, 2-bis(1-piperidyl)phosphinooxy-3,3',5,5'-tetra-tert-butyl-2'-[4,4',6,6'- tetra-tert-butyl-2,2'-biphenyldioxyphosphinooxy]-1,1'-biphenyl],. 2- Bis(1-piperidyl)phosphinooxy-5,5'-di-tert-butyl-3,3'-dimethoxy-2'-[6,6'-di-tert-butyl-4,4'-dimethoxy-2,2'-biphenyldioxyphosphinooxy]- 1,1'-biphenyl, 2-bis(1-pyrrolyl)phosphinooxy-3,3',5,5'-tetra-tert- butyl-2'-[4,4',6,6'-tetra-tert-butyl-2,2'- biphenyldioxyphosphinooxy]-1,1'-biphenyl, 1,3-diphenyl-2-[4,6-di-tert-butyl-2-3,5-di-tert-butyl-2-(4,4',6,6'-tetra-tert-butyl-2,2'- diphenyldioxy)phosphinooxy]phenyl phenoxy-2,1,3-phosphiadiazolidine, 2-bis(2-oxo-4-morpholinyl)phosphinooxy-3,3',5,5'-tetra-tert-butyl-2'-[4,4',6,6'-tetra-tert-butyl-2,2'-biphenyldioxyphosphinooxy]-1,1'-biphenyl, 2-bis(4-morpholinyl)phosphinooxy-2'-[4,4',6,6'-tetra-tert-butyl-2,2'-biphenyldioxyphosphinooxy]-1,1'-biphenyl, 2-bis(1-piperidyl)phosphinooxyethoxy[4,4',6,6'-tetra-tert-butyl-2,2'-biphenyldioxyphosphine], or 2-bis(4-morpholinyl)phosphinooxyethoxy[4,4',6,6'-tetra-tert-butyl-2,2'- biphenyldioxyphosphine] are prepd. The catalyst is composed of 1-20 mol organo-phosphine compd. and 1 mol VIII metallic compd. The catalyst is used in hydroformylation of C2-20 terminal olefin, C4-20 olefin, or C4-8 cycloolefine with CO and H2 at 50-150° and 0.1-3.0 MPa. The title compd. I was prepd. and used in hydroformylation of 1-octene.
IT 321181-49-1P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation and application of organophosphine compds. in catalyst system)
RN 321181-49-1 CAPLUS
CN Phosphinous acid, di-1H-pyrrol-1-yl-, 3,3',5,5'-tetrakis(1,1-dimethylethyl)-2'-[[2,4,8,10-tetrakis(1,1-dimethylethyl)dibenzo[d,f][1,3,2]dioxaphosphepin-6-yl]oxy][1,1'-biphenyl]-2-yl ester (9CI) (CA INDEX NAME)

L6 ANSWER 26 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)



L6 ANSWER 27 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN

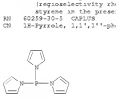
ACCESSION NUMBER: 2000:374651 CAPLUS
DOCUMENT NUMBER: 133:9593
TITLE: The new organometallic rhodium-iron homogeneous catalytic system for hydroformylation
AUTHOR(S): Trzeciak, Anna M.; Mieczynska, Ewa; Ziolkowski, Jozef J.
CORPORATE SOURCE: Faculty of Chemistry, University of Wroclaw, Wroclaw, 50-383, Pol.
SOURCE: Topics in Catalysis (2000), 11/12(1-4), 461-465
CODEN: TOCAT7; ISSN: 1022-5528
PUBLISHER: Baltzer Science Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The addition of Fe(CO)5 to the systems with [Rh(acac)(CO)2] complexes (L = PPh3, P(OPh)3, P(NC4H4)3) as catalyst precursors caused the increase of aldehydes yield in 1-hexene hydroformylation reaction (90°C, 10 atm; up to 71%. The IR and 1H NMR measurements confirm the formation of an unstable bimetallic intermediate, [(H)(PPh3)Rh(μ-CO)2Fe(CO)4], characterized with νCO at 1749 cm-1 and hydride signal at δ -15.8 ppm.
IT 193418-87-0
RL: CAT (Catalyst use); PEP (Properties); USES (Uses)
(organometallic rhodium-iron homogeneous catalytic system for hydroformylation)
RN 193418-87-0 CAPLUS
CN Rhodium, carbonyl(2,4-pentanedionato-κO,κO')[1,1',1''-(phosphinidyne-κP)tris[1H-pyrrole]]-, (SP-4-2)- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 28 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1999:29777 CAPLUS
DOCUMENT NUMBER: 131:116292
TITLE: Probing new classes of κ-acceptor ligands for rhodium catalyzed hydroformylation of styrene
AUTHOR(S): Brait, Bernhard
CORPORATE SOURCE: Fachbereich Chemie, Philipps-Universitat Marburg, Marburg, D-35043, Germany
SOURCE: Journal of Molecular Catalysis A: Chemical (1999), 143(1-3), 143-154
CODEN: JMCCF2; ISSN: 1381-1169
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 131:116292
AB Three hitherto unexplored classes of strong κ-acceptor ligands for use in homogeneous catalysis: phospha-κ-aromatic compds. (class A), pyrrolyl phosphines (class B) and phosphenium cations (class C) were evaluated for Rh catalyzed hydroformylation of styrene. When testing monodentate ligands, the ortho/ortho'-disubstituted phosphabenzene derivative 1b provided a Rh-catalyst endowed with the highest catalytic activity. Based upon these results a 1st series of bidentate phosphabenzene ligands were tailored employing the concept of an electronic differentiation of the two binding sites. An oxazoline/phosphabenzene system 8 which is capable of forming an eight-membered chelation ring gave the best results. This, a quant. conversion of styrene at ambient temperature afforded the desired 2-phenylpropanal in high regioselectivity (25:1).
IT 60259-30-5
RL: CAT (Catalyst use); USES (Uses)
(regioselectivity rhodium-catalyzed hydroformylation of styrene in the presence of)
RN 60259-30-5 CAPLUS
CN 1H-Pyrrole, 1,1',1''-phosphinidynetris- (CA INDEX NAME)

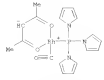


REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

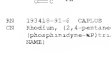
L6 ANSWER 29 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1999:186303 CAPLUS
DOCUMENT NUMBER: 130:275708
TITLE: Novel rhodium(I) complexes with (2-hydroxyphenyl)diphenylphosphine ligand: catalytic properties and x-ray structures of Rh(OCS8F4PPh2)(CO)(PPh3) and Rh(OCS8F4PPh2)(P(OPh)3)2·0.5CH2Cl2
AUTHOR(S): Trzeciak, Anna M.; Ziolkowski, Jozef J.; Lis, Tadeusz
CORPORATE SOURCE: Chemikrom, Robert
Faculty of Chemistry, University of Wroclaw, Wroclaw, 50-383, Pol.
SOURCE: Journal of Organometallic Chemistry (1999), 575(1), 87-97
CODEN: JORCAJ; ISSN: 0022-328X
PUBLISHER: Elsevier Science S.A.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The novel rhodium complexes with the bidentate PO ligand (PO = OCS8F4PPh2-)
Rh(PO)(CO)L (L = PPH = HOCS8F4PPh2 (1), PPh3 (2), P(NC4H4)3 (4), PPh2(NC4H4) (6)) and Rh(PO)L2 (L = P(OPh)3 (3), P(NC4H4)3 (5)) were obtained by ligand exchange in Rh(β-diketone)(CO)2, Rh(β-diketone)(CO)L and Rh(β-diketone)L2 complexes. All complexes of the Rh(PO)(CO)L type exist in solution as isomers with both phosphorus atoms in the trans position as was shown by 31P{1H}-NMR. 2 And 3 were characterized by x-ray crystallog. (2: monoclinic, space group P21/n, R1 = 0.0322, 3·1/2CH2Cl2: triclinic, space group P.hivin.1, R1 = 0.0334). The trans influence of the phosphorus atom of a bidentate PO ligand is stronger than that of oxygen atom, which is manifested by the differences of Rh-P bonds in 2 (2.283(1) and 2.327(1) Å) and of Rh-P (phosphite) bonds in 3 (2.233(2) and 2.139(2) Å). 1 And 2 used alone or with an excess of free phosphine (PPH, PPh3, P(NC4H4)3) are not active in hexa-1-ene hydroformylation at 1 MPa CO/H2 = 1 and at 353 K. The lack of catalytic activity is explained by the extremely high stability of the chelate (PO) ring which does not give the active form of the catalyst. In contrast, 3 used alone as the catalyst precursor produces 54 and 72.9% of aldehydes when used with a 6-fold excess of P(OPh)3. 1 Modified with P(OPh)3 catalyzes hex-1-ene hydroformylation with a 72.6-84.4% yield of aldehydes. Under hydroformylation reaction conditions, the PO ligand is removed from the coordination sphere of 1 and complexes HRh(CO)(P(OPh)3)3 and HRh(P(OPh)3)4 are formed.
IT 193418-87-0 193418-90-5 193418-91-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(for preparation of rhodium (diphenylphosphino)phenolato phosphine complex)
RN 193418-87-0 CAPLUS
CN Rhodium, carbonyl(2,4-pentanedionato-κO,κO')[1,1',1''-(phosphinidyne-κP)tris[1H-pyrrole]]-, (SP-4-2)- (9CI) (CA INDEX NAME)

L8 ANSWER 29 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

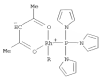


RN 193418-90-5 CAPLUS
CN Rhodium, carbonyl[1-(diphenylphosphino-κP)-1H-pyrrole][2,4-pentanedionato-κO,κO']-, (SP-4-2)- (9CI) (CA INDEX NAME)

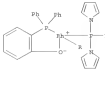


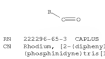
RN 193418-91-6 CAPLUS
CN Rhodium, [2,4-pentanedionato-κO,κO']bis[1,1',1''-phosphinidyne-κP]tris[1H-pyrrole]]-, (SP-4-2)- (9CI) (CA INDEX NAME)

L8 ANSWER 29 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)



TT 222296-64-2P 222296-65-3P 222296-67-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 222296-64-2 CAPLUS
CN Rhodium, carbonyl[2-(diphenylphosphino-κP)phenolato-κO][1,1',1''-(phosphinidyne-κP)tris[1H-pyrrole]]-, (SP-4-2)-(9CI) (CA INDEX NAME)

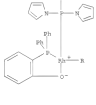




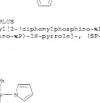
RN 222296-65-3 CAPLUS
CN Rhodium, [2-(diphenylphosphino-κP)phenolato-κO]bis[1,1',1''-(phosphinidyne)tris[1H-pyrrole]]-, (SP-4-3)- (9CI) (CA INDEX NAME)

L8 ANSWER 29 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

PAGE 1-A



PAGE 2-A



RN 222296-67-5 CAPLUS
CN Rhodium, carbonyl[2-(diphenylphosphino-κP)phenolato-κO][1-(diphenylphosphino-κP)-1H-pyrrole]-, (SP-4-2)- (CA INDEX NAME)

REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

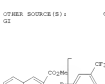
L8 ANSWER 30 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER:	1998:62262 CAPLUS
DOCUMENT NUMBER:	128:127605
TITLE:	Process to prepare a linear aldehyde by hydroformylation using a bidentate phosphorus ligand
INVENTOR(S):	Breikss, Anne Irina; Burke, Patrick M.; Garner, James Michael; Tam, Wilson
PATENT ASSIGNEE(S):	E. I. Du Pont de Nemours & Co., USA; DSM N.V.
SOURCE:	U.S., 9 pp. CODEN: USXXAM
DOCUMENT TYPE:	Patent
LANGUAGE:	English
FAMILY ACC. NUM. COUNT:	1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5710344	A	19980120	US 1996-745238	19961108
WO 9819985	A1	19980514	WO 1997-US19902	19971103
W: CN, JP				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, NC, NL, PT, SE				
EP 937022	A1	19990825	EP 1997-946449	19971103
EP 937022	B1	20010725		
R: DE, FR, NL				
CN 1236353	A	19991124	CN 1997-199540	19971103
JP 2001503426	T	20010313	JP 1998-521631	19971103
PRIORITY APPLN. INFO.:			US 1996-745238 A	19961108
			WO 1997-US19902 W	19971103

OTHER SOURCE(S): CASREACT 128:127605; MARPAT 128:127605
GI



AB The invention relates to a process for the preparation of linear aldehydes by
hydroformylation of ethylenically unsatd. organic compds. with carbon monoxide and hydrogen in the presence of a catalyst system comprising a

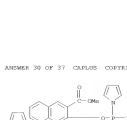
L8 ANSWER 30 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

Group VIII metal and a bidentate org. ligand. The bidentate org. ligand is characterized in that it has two trivalent phosphorus atoms each contg.
at least one P-C or one P-N bond and represented by formula R3R4P-Q-PR3R4 (R3, R4 = aryl or nitrogen contg. heterocycle groups, where the nitrogen is bound to the phosphorus). This invention provides a process for the prepn. of linear aldehydes with high catalyst performance (selectivity and/or activity) which achieves a combination of high selectivity towards linear aldehydes and relatively high catalyst activity. The advantages of
this novel process are even more pronounced when starting from internally unsatd. org. compds., whereas prepn. linear aldehydes from internally unsatd. compds. using previously known hydroformylation processes generally resulted in lower selectivity to linear aldehydes, increased hydrogenation of the olefinic double bond and/or lower catalytic
activity. An addnl. advantage of the present process is that the linear selectivity is high, whereas linear selectivity, "linearity", is defined as the mole ratio of the linear aldehydes compared to the total aldehyde product from the hydroformylation reaction. Thus, A 25 mL glass lined pressure vessel was charged with 5 mL of a sols. contg. 100 mmol Me 3-pentenoate, 0.2 mmol dirhodium[2,2,4,4-tetramethyl-3,5-heptanedionato]rhodium, 1.0 mmol of ligand (1) (preps. given) and 1.00 g of tetradecane (Internal GC std.) in 100 mL toluene (the molar ratio of ligand to rhodium being 5). The pressure vessel was freed from air by purging first with nitrogen (twice) and then with 1:1 CO/H2 (twice) and was pressurized to 75 psi CO and heated to 100° C. with agitation for 2 h to give a product contg. Me 5-formylvalerate which was analyzed by
GC. Me 3-pentenoate conversion [% Me 3-pentenoate and Me 4-pentenoate reacted] was 40.0%; linearity [100*methyl 5-formylvalerate (MEFV)/(Me 5-formylvalerate+branched formylvalerates)] was 97%, and selectivity [100*MEFV/All products]: 64%.

IT 202124-56-99
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(process to prepare a linear aldehyde by hydroformylation of ethylene-containing unsatd. organic compds. using a bidentate phosphorus
ligand)

RN 202124-56-9 CAPLUS

CN [1,1'-Binaphthalene]-3,3'-dicarboxylic acid, 2,2'-bis[(di-1H-pyrrol-1-ylphosphino)oxy]-, dimethyl ester (9CI) (CA INDEX NAME)



L8 ANSWER 30 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE
FORMAT

L8 ANSWER 31 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN

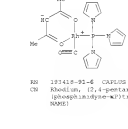
ACCESSION NUMBER: 1997:619024 CAPLUS
DOCUMENT NUMBER: 127:153447
TITLE: Novel rhodium complexes with N-pyrrolylphosphines: attractive precursors of hydroformylation catalysts
AUTHOR(S): Trzeciak, Anna M.; Glowiak, Tadeusz; Grzybek, Ryszard;
CORPORATE SOURCE: Zielkowski, Jozef J.
Faculty of Chemistry, University of Wroclaw, Wroclaw, 50-383, Pol.
SOURCE: Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry (1997), (11), 1833-1837
CODEN: JCDTBI; ISSN: 0300-9246
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English

AB [Rh(acac)(CO)(PPh(NC4H4)2)] 1a, [Rh(acac)(CO)(PPh(NC4H4)2)] 1b, [Rh(acac)(CO)(PPh2(NC4H4))] 1c, [Rh(acac)(PPh(NC4H4)2)2] 2a, [Rh(acac)(PPh2(NC4H4))2] 2b [Rh(acac)(PPh2(NC4H4))2] 2c (acac = acetylacetonate) have been found to be precursors of very active and selective hydroformylation catalysts as [RhH(CO)(PPh(NC4H4)2)3] 3a, [RhX(CO)(PPh2(NC4H4)2)] 3b and [RhH(CO)(PPh2(NC4H4))3] 3c resp., which
at 60°C and 10 atm H2-CO produce 80-90% of aldehydes with n:iso 3-31:1.

IT 193418-97-0 193418-91-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(crystal structure; rhodium complexes with N-pyrrolylphosphines as precursors of hydroformylation catalysts)

RN 193418-97-0 CAPLUS

CN Rhodium, carbonyl[2,4-pentanedionato-κO,κO']bis[1,1',2''-phosphinidyne-κP]tris[1H-pyrrole]- (9CI) (CA INDEX NAME)



RN 193418-91-6 CAPLUS

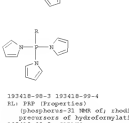
CN Rhodium, (2,4-pentanedionato-κO,κO')bis[1,1',1''-(phosphinidyne-κP)tris[1H-pyrrole]]-, (SP-4-2)- (9CI) (CA INDEX NAME)

L8 ANSWER 31 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

IT 193418-98-3 193418-99-4
RL: PRP (Properties)
(phosphorus-31 NMR of; rhodium complexes with N-pyrrolylphosphines as precursors of hydroformylation catalysts)

RN 193418-98-3 CAPLUS

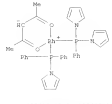
CN Rhodium, [1-(diphenylphosphino-κP)-1H-pyrrole](2,4-pentanedionato-κO,κO')[1,1',2''-phosphinidyne-κP]tris[1H-pyrrole]-, (SP-4-3)- (9CI) (CA INDEX NAME)



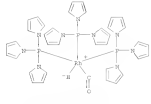
RN 193418-99-4 CAPLUS

CN Rhodium, [1-(diphenylphosphino-κP)-1H-pyrrole](2,4-pentanedionato-κO,κO')[1,1'-(phenylphosphinidene-κP)bis[1H-pyrrole]]-, (SP-4-3)- (9CI) (CA INDEX NAME)

L6 ANSWER 31 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

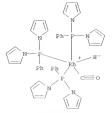


IT 193418-95-0P 193418-96-1P 193418-97-2P
RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(rhodium complexes with N-pyrrolylphosphines as precursors of hydroformylation catalysts)
RN 193418-95-0 CAPLUS
CN Rhodium, carbonylhydrotris[1,3',3''-(phosphinidyne-κP)tris[1H-pyrrole]]-, [SP-5-23]- (9CI) (CA INDEX NAME)

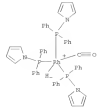


RN 193418-96-1 CAPLUS
CN Rhodium, carbonylhydrotris[1,3''-(phenylphosphinidene-κP)bis[1H-pyrrole]]- (9CI) (CA INDEX NAME)

L8 ANSWER 31 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)



RN 193418-97-2 CAPLUS
CN Rhodium, carbonyltris[1-(diphenylphosphine-κP)-1H-pyrrole]hydro- (CA INDEX NAME)



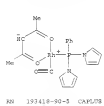
IT 54905-98-8 54906-05-2 60259-30-5
193418-89-2 193418-90-5 193418-93-8
193418-94-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(rhodium complexes with N-pyrrolylphosphines as precursors of hydroformylation catalysts)
RN 54905-98-8 CAPLUS
CN 1H-Pyrrole, 1-(diphenylphosphino)- (CA INDEX NAME)

L8 ANSWER 31 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

RN 54906-05-2 CAPLUS
CN 1H-Pyrrole, 1,1'-(phenylphosphinidene)bis- (CA INDEX NAME)

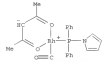
RN 60259-30-5 CAPLUS
CN 1H-Pyrrole, 1,3',3''-phosphinidynetris- (CA INDEX NAME)

RN 193418-89-2 CAPLUS
CN Rhodium, carbonyl[2,4-pentanedionato-κO,κO']{1,2'-(phenylphosphinidene-κP)bis[1H-pyrrole]}-, (SP-4-2)- (9CI) (CA INDEX NAME)

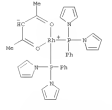


RN 193418-90-5 CAPLUS
CN Rhodium, carbonyl[1-(diphenylphosphino-κP)-1H-pyrrole](2,4-pentanedionato-κO,κO')-, (SP-4-2)- (9CI) (CA INDEX NAME)

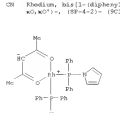
L8 ANSWER 31 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)



RN 193418-93-8 CAPLUS
CN Rhodium, [2,4-pentanedionato-κO,κO']bis[1,1'-(phenylphosphinidene-κP)bis[1H-pyrrole]]-, (SP-4-2)- (9CI) (CA INDEX NAME)



RN 193418-94-9 CAPLUS
CN Rhodium, bis[1-(diphenylphosphine-κP)-1H-pyrrole](2,4-pentanedionato-κO,κO')-, (SP-4-2)- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 52 THERE ARE 52 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 31 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

L8 ANSWER 32 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1994:598220 CAPLUS
DOCUMENT NUMBER: 125:275334
ORIGINAL REFERENCE NO.: 125:51485a,51486a
TITLE: Highly regioselective hydroformylation under mild conditions with new classes of π-acceptor ligands
AUTHOR(S): Breit, Bernhard
CORPORATE SOURCE: Fachbereich Chemie, Philipps-Univ. Marburg, Marburg, D-35037, Germany
SOURCE: Chemical Communications (Cambridge) (1994), (17), 2071-2072
CODEN: CHCOFS; ISSN: 1359-7345
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 125:275334
GI

I

AB The first use of three new classes of π-acceptor ligands, e.g. 4-cyclohexylphosphabenzene, 1, in homogeneous catalysis is reported; the corresponding rhodium catalysts combine high regioselectivity with high reactivity on hydroformylation of styrene.
IT 60259-30-5
RL: CAT (Catalyst use); USES (Uses)
(use of π-acceptor ligands for regioselective rhodium-catalyzed hydroformylation of styrene)
RN 60259-30-5 CAPLUS
CN 1H-Pyrrole, 1,1',1''-phosphinidynetris- (CA INDEX NAME)

L8 ANSWER 33 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1989:534722 CAPLUS
DOCUMENT NUMBER: 111:134322
ORIGINAL REFERENCE NO.: 111:22495a,22496a
TITLE: The reaction of tetrazole with phosphoramidites as a model for the nucleotide coupling step
AUTHOR(S): Berner, S.; Muehlegger, K.; Seliger, H.
CORPORATE SOURCE: Sekt. Polym., Univ. Ulm, Ulm, D-7900, Fed. Rep. Ger.
SOURCE: Nucleosides & Nucleotides (1989), 7(5-6), 763-7
CODEN: NUNUD5; ISSN: 0732-8311
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 111:134322
AB The reaction of (EtO)2PN(CHMe2)2 with tetrazole gave 52% 1-tetrazolyldiethoxyphosphine.
IT 54006-06-39
RL: PEP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(preparation and properties of)
RN 54006-06-3 CAPLUS
CN Phosphonous acid, 1H-pyrrol-1-yl-, diethyl ester (9CI) (CA INDEX NAME)

L8 ANSWER 34 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1989:458242 CAPLUS
DOCUMENT NUMBER: 111:58262
ORIGINAL REFERENCE NO.: 111:9903a,9906a
TITLE: Studies on the role of tetrazole in the activation of phosphoramidites
AUTHOR(S): Berner, S.; Muehlegger, K.; Seliger, H.
CORPORATE SOURCE: Sekt. Polym., Univ. Ulm, Ulm, D-7900, Fed. Rep. Ger.
SOURCE: Nucleic Acids Research (1989), 17(3), 853-64
CODEN: NARHAD; ISSN: 0305-1048
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The mechanism of the tetrazole-activated coupling step in the synthesis of oligonucleotides via phosphoramidites is studied with the help of model reactions: treatment of diethoxydilsopropylaminophosphine with two equivalent of tetrazole resulted in a diethoxytetrazolophosphine, whose 31P-NMR shift of 126 ppm is identical with the signal observed during internucleotide bond formation. A series of different related diethoxyphosphorous acid derivs. were also synthesized; their 31P-NMR signals between 123.9 and 130.8 ppm are addnl. evidence for the intermediacy of a tetrazolide species. Further NMR investigations with more basic azoles showed that tetrazole is also active as a proton donor.
IT 54006-06-39
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 54006-06-3 CAPLUS
CN Phosphonous acid, 1H-pyrrol-1-yl-, diethyl ester (9CI) (CA INDEX NAME)

L8 ANSWER 35 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1986:149172 CAPLUS
DOCUMENT NUMBER: 104:149172
ORIGINAL REFERENCE NO.: 104:23625a,23628a
TITLE: Chiral phosphorus-containing ligands from natural amino acids and their use in catalysts for enantioselective synthesis
INVENTOR(S): Petit, Michele; Mortreux, Andre; Petit, Francis; Buono, Gerard; Peiffer, Gerard
PATENT ASSIGNEE(S): Societe Chimique des Charbonnages S. A., Fr.
SOURCE: Fr. Demande, 21 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
FR 2550201	A1	19850208	FR 1983-12953		19830805
FR 2550201	B1	19860228			
EP 136210	A1	19850403	EP 1984-401621		19840803
EP 136210	B1	19890816			
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE					
AT 45581	T	19890915	AT 1984-401621		19840803
JP 60089492	A	19850520	JP 1984-164737		19840806
JP 05004395	B	19930119			
CA 1244451	A1	19881108	CA 1984-460551		19840808
US 4877908	A	19891031	US 1987-107919		19871013
US 5099077	A	19920324	US 1989-398539		19891011
JP 05092983	A	19930416	JP 1991-339712		19911128
US 5210202	A	19930511	US 1991-811673		19911223
JP 06092981	A	19940405	JP 1992-257477		19920901
PRIORITY APPLN. INFO.:			FR 1983-12953	A	19830805
			EP 1984-401621	A	19840803
			US 1984-638268	A2	19840806
			US 1985-698412	A1	19850205
			US 1987-107919	A3	19871013
			US 1989-398539	A3	19891011

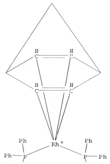
OTHER SOURCE(S): MARPAT 104:149172
AB Chiral P ligands R1R2NCR3R4CR5R6OPPh2 [I; R1, R2 = H, hydrocarbon, PPh2; R2, R3 = H, hydrocarbon (un)substituted by PPh2, alc., thiol, thioether, amine, imine, acid derivative, R2 ≠ R3; R5, R6 = H, hydrocarbon] were prepared Thus, (+)-ephedrine reacted with 2 equivalent ClPPh2 to give (1S,2R)-Ph2PNMeCHMeCHPhOPPh2 (II) of 95% optical purity. II reacted with Rh2Cl2(CO)4 to give RhCl(CO)(L) (III; L = II). III catalyzed asym. hydroformylation, with 45% conversion of PhCH:CH2 to product containing 93% PhCHMeCHO (IV) and 7% PhCH2CH2CHO; S-IV was formed with 25% optical yield.

L8 ANSWER 35 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)
IT 101299-72-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and catalyst activity of, for asym. hydrogenation)
RN 101299-72-3 CAPLUS
CN Rhodium(1+), [(2,3,5,6-η)-bicyclo[2.2.1]hepta-2,5-diene][3-[1-(diphenylphosphino)-1H-indol-3-yl]-2-[(diphenylphosphino)methylamino]propyl diphenylphosphinite]-, stereoisomer, perchlorate (9CI) (CA INDEX NAME)

CM 1

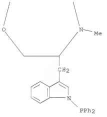
CRN 101299-71-2
CMF C55 H51 N2 O P3 Rh
CCI CCS

PAGE 1-A



L8 ANSWER 35 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)

PAGE 2-A

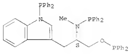


CM 2

CRN 14797-73-0
CMF Cl O4

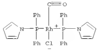
IT 101339-62-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, for use in metal-containing asym. catalyst)
RN 101339-62-2 CAPLUS
CN Phosphinous acid, diphenyl-, 3-[1-(diphenylphosphino)-1H-indol-3-yl]-2-[(diphenylphosphino)methylamino]propyl ester, (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

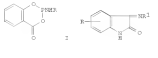


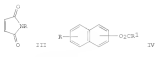
L8 ANSWER 36 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1981:138913 CAPLUS
DOCUMENT NUMBER: 94:138913
ORIGINAL REFERENCE NO.: 94:22737a,22740a
TITLE: Improvement in selectivity to normal product during hydroformylation of hex-1-ene through electronic transfers in carbonylchlorohodium (Pϕ2NR1R2)2 complexes
AUTHOR(S): Grimblot, J.; Bonnelle, J. P.; Vaccher, C.; Mortreux, A.; Petit, F.; Peiffer, G.
CORPORATE SOURCE: ENSCL, Univ. Sci. Tech. Lille, Villeneuve d'Ascq, 59650, Fr.
SOURCE: Journal of Molecular Catalysis (1980), 9(4), 357-68
CODEN: JMCADS; ISSN: 0304-5102
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The selectivity for normal aldehyde formation was examined in the title reaction with RhClCO(PPh2NRR1)2 (R, R1 = alkyl, aryl) catalysts. X-ray photoelectron and IR spectral data showed that the electron distribution between N, P, and Ph atoms and in the CO group depends on the alkyl or aryl nature of the substituents. In particular, an increasing π-acceptor ability of the aminophosphine ligand is obtained when R and R1 are aryl, owing to delocalization of the N lone pair. Under such conditions, highly selective catalysts are obtained.
IT 54005-98-0
RL: PRP (Properties)
(binding energy of)
RN 54005-98-0 CAPLUS
CN 1H-Pyrrole, 1-(diphenylphosphino)- (CA INDEX NAME)

IT 76933-25-0
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for hydroformylation of hexene, selectivity with)
RN 76933-25-0 CAPLUS
CN Rhodium, carbonylchlorobis[1-(diphenylphosphino)-1H-pyrrole-P]- (9CI) (CA INDEX NAME)



L8 ANSWER 37 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1977:16610 CAPLUS
DOCUMENT NUMBER: 86:16610
ORIGINAL REFERENCE NO.: 86:2705a,2706a
TITLE: Some results of studies on the synthesis of and search
for new chemical preparations to control cotton plant diseases
AUTHOR(S): Maiorov, N. Kh.
CORPORATE SOURCE: Vses. Inst. Issh. Irrig. Mekh. Sel'sk. Khoz., Tashkent, USSR
SOURCE: Uzbekskii Khimicheskii Zhurnal (1976), (3), 39-57
CODEN: UKZHAC
DOCUMENT TYPE: Journal
LANGUAGE: Russian
GI





AB KP(O)(CH2CH2Cl)OCH2CH2Cl [R = substituted anilino, benzotriazolyl, benzimidazolyl, piperidyl, phthalimido, imdolyl], I (R = Ph, p-tolyl, p-ClC6CO6H4, o-ClNC5H4, o-MeOC6H4), RC6H4NHCH2CH(OH)X1 [R = H, o-, m-, p-Me, o-, m-, p-MeO, o-, m-, p-Cl, m-CF3, R1 = H, Me, MeOCH2, X2 = CCCHCl2, substituted phenylcarbamoyl, acetyl, PhSO2], II [R = H, Me, Br, R1 = 3,4-Cl2C6H3, 3-F3CC6H4, 4-ClC6H4, 4-MeOC6H4, 3-ClNC5H4), RSHCOCH:CHCO2X [R = substituted phenyl, 2-thiazolyl, 2-pyridyl], III [R = substituted phenyl], IV (R = H, NO2, Br, R1 = alkenyl, 2-furylvinyl, vinyl, 1-propenyl, chloromethyl, isopropenyl, R1CH2C2N [R = alkenyl, alkyl, Ph, phenylcarbamoylmethyl, and RNHNR1 [R = 2,6-dianino-3-pyridyl, 2,4-dianinopheayl, hatidyl, R1 = pyridyl, quinolyl, substituted phenyl] [156 compds.], useful an control of cotton plant diseases [no data], were prepared by previously published syntheses.
IT 61293-68-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 61293-68-3 CAPLUS

L8 ANSWER 37 OF 37 CAPLUS COPYRIGHT 2008 ACS on STN (Continued)
CN Phosphinic acid, (2-chloroethyl)-1H-indol-1-yl-, 2-chloroethyl ester (9CI)
(CA INDEX NAME)